United States Court of Appeals
for the
District of Columbia Circuit

TRANSCRIPT OF RECORD

BRIEF AND APPENDIX FOR APPELLANTS.

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Joseph W. Stewart

IN THE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA.

No. 8491

48

LINE MATERIAL COMPANY, A CORPORATION, AND
WILLIAM O. SCHULTZ, *Appellants,*

v.

Casper W. Ooms
~~CONWAY P. COE~~, COMMISSIONER OF PATENTS,
Appellee.

Appeal from the Judgment of the District Court of the United States for the District of Columbia.

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LINE MATERIAL COMPANY, A CORPORATION, AND
WILLIAM O. SCHULTZ, *Appellants,*

v.

CONWAY P. COE, COMMISSIONER OF PATENTS,
Appellee.

Appeal from the Judgment of the District Court of the United States for the District of Columbia.

BRIEF FOR APPELLANTS.

JURISDICTIONAL STATEMENT.

This is a suit in equity against the Commissioner of Patents which arose because of the refusal of the United States Patent Office to grant a patent upon an application duly filed and prosecuted in the name of appellant, William O. Schultz, and which application is assigned of record in the Patent Office to the plaintiff-appellant, Line Material Company.

Jurisdiction in the District Court below, as well as in this Court, is based on the provisions of the Revised Statutes, Title LX, Section 4915 (U. S. C., Title 35, Sec. 63; 27 Stat. 436).

The complaint and answer in the court below (Appellants' App. 2, 3 and 9) set forth and admit jurisdiction of the court in this suit.

The present suit was filed in the United States District Court for the District of Columbia within six months after the Board of Appeals of the United States Patent Office affirmed the earlier decision of the Primary Examiner denying a patent to the appellants here involved. No appeal was taken from the decision of the Board of Appeals to the United States Court of Customs and Patent Appeals.

STATEMENT OF THE CASE.

On May 24, 1934, an application for letters patent entitled "Fuse Constructions" was filed in the United States Patent Office by William O. Shultz and was given Serial No. 727,250 (Plaintiffs' Exhibit 1, Appellants' App. 98 to 116 inclusive). This application was assigned of record in the Patent Office to the plaintiff-appellant, Line Material Company, a corporation, such fact being admitted by the defendant-appellee in its answer (Appellants' App. 9) and the entire right, title and interest in and to said application Serial No. 727,250 is now vested in plaintiff-appellant, Line Material Company.

This application, as is evident from the fact that claims have been allowed therein (Appellants' App. 117), discloses novel and patentable invention relating to fuse constructions and is embodied in three different species in the application, best illustrated in Figures 1, 4 and 5 of the drawings (Plaintiffs' Exhibit 1, Appellants' App. 98, and Plaintiff's Charts Exhibits 2 and 3).

Three claims of that application are here in issue, namely claims 46, 48 and 49 (Plaintiffs' Charts Exhibits 4, 5 and 6) which were finally rejected by the Patent Office. These three claims each relates to an electrical fuse construction in which a fuse tube is provided for connecting a pair of spaced contacts or terminals, and which tube upon blowing of the fuse is forced downwardly by a spring and out of contact with the upper terminal or contact; there also being provided a releasable locking means or lever for holding the fuse tube against downward movement prior to blowing of the fuse.

The appellee admitted below (Appellants' App. 30) that the question of patentability of these claims over prior patents is not here in issue. Only a single question is involved in this suit, namely whether claims 46, 48 and 49 are supported by the William O. Schultz application as originally filed in the Patent Office. Since the record below contains a concise statement of this proposition and the assent thereto by the defendant (Appellants' App. 20, 21, and 30) such pertinent statement is being quoted herebelow for the convenience of the Court.

> "Mr. Meroni: * * * There is only a single issue involved in this case. That issue is whether the applicant, William Schultz, and his assignee, Line Material Company, is entitled to a patent on three claims 46, 48 and 49. These claims have been formerly rejected in the United States Patent Office, not in view of any prior patented art but solely on the question of new matter, so that the issue we ask this court to decide at this time is whether these three claims are supported by the original application filed in the United States Patent Office by William Schultz. There is no other issue before this court. I believe I am correct in that.
>
> "Mr. Cochran: That is right.
>
> * * * * * * * * *
>
> "Mr. Cochran: **If it please Your Honor, Mr Meroni correctly states that the only issue here is whether the Schultz application as filed in the Patent Office will support these three claims.** These three claims, I may say, Your Honor, are now to be found in a patent granted to another party. (Emphasis ours.)
>
> "The Court: On an application that was filed before this one?
>
> "Mr. Meroni: No, it was not filed before this one, Your Honor. We were senior party in that interference, but it was held that we couldn't make these three claims.

> "Mr. Cochran: So that the question of the patentability of these claims over prior patents is not here in issue."

For the convenience of the court, we are also reproducing herebelow a representative claim of the three on appeal, the issue in suit being the same as to all three claims (Appellants' App. 48), which claim has been broken down into its essential elements, as illustrated graphically in Plaintiffs' Physical Exhibit 5:

48. In combination

    a pair of contacts,

    a fuse for connecting said contacts

        said fuse comprising

            a fuse tube having
            spaced terminals and
            being movable relative to
            one of them

    means for locking the fuse to at least one of said contacts, and means for moving the fuse tube longitudinally relative to said one of said fuse terminals *to release said locking means.*

The italicized portion designates the only part of the claim which the Patent Office in its rejections asserted did not find support in the original application disclosure of Schultz.

More specifically, the Patent Office, in its refusal of a patent with these three claims, has held (Appellants' App. 117 to 121) that the last means clause of each of these claims here on appeal is not supported by the Schultz application as originally filed, because it was the position of the Examiner that the spring means for moving the fuse tube downwardly upon blowing of the fuse would not, in the opinion of the Examiner, operate in the release of the latching or locking lever which normally holds the fuse tube in its unblown position. In the three species of the Schultz application shown in Figures 1, 4 and 5, the spring means for moving the fuse tube 11-50-73 downwardly comprise respectively the spring 15-66-90, and the latching levers in these three species comprise respectively the levers 28-61-85.

The court below made findings that differ somewhat from those of the Patent Office as to the interpretation of the disclosure in the Schultz application as originally filed, as is evident from the findings of fact and conclusions of law (Appellants' App. 13 to 16) entered by the lower court, although the lower court did ultimately arrive at the conclusion that the applicant was not entitled to letters patent with the three claims in suit.

A representative finding of fact of the lower court is quoted herebelow for the convenience of the court:

> **"10. The degree to which springs 15, 66 and 90 operate in the ultimate complete release of the latch is not set forth in the descriptive matter of the Schultz application nor is it affirmatively disclosed in the model demonstrations made at the hearing before this Court that said springs exerted any more than slight influence on the complete release of the latch. Granting, however, that such operation might be held to be inherent in the fuse structures illustrated by Figs. 1, 4 and 5 of the application drawings and in the unquestioned models which were demonstrated by plaintiffs' witness, a man skilled in the art, who testified that these springs must function in order that a final release of the latch may be effected, it is held that to permit plaintiffs to claim a fuse with such operation, as in claims 46, 48 and 49, and to amend the specification to cure the deficiencies would result in new matter being introduced in the application."**

For a further statement of the lower court's position, attention is directed to the memorandum opinion of the lower court (Appellants' App. 12 and 13).

In reaching its ultimate decision, the lower court found in substance that certain statements of the descriptive matter of the Schultz specification recited that the latch is released by other means, such as spring 33 of Figure 1 and its component parts in Figures 4 and 5, and **hence even though the fuse ejecting spring, 15 in Figure 1, 66 in Figure**

4 and 90 in Figure 5, has been shown to function inherently in the release of the latch and has been testified to by one skilled in the art as must having to perform this operation, to permit the applicant Schultz to make the claims on appeal or to amend his specification would result in the introduction therein of new matter.

STATUTES AND RULES INVOLVED.

The principal statutes involved in the present suit and appeal are the patent statutes of the United States.

It is believed that the only statute that is involved in the issue of the present case, directly or indirectly, is R. S. 4888, as amended by the Act of May 23, 1930, 46 Stat. L. 376 (U. S. C., Title 35, Section 33). This section reads as follows:

> "Before any inventor or discoverer shall receive a patent for his invention or discovery, he shall make application therefor in writing, to the Commissioner of Patents, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions; and he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery."

The Patent Office Rules of Practice that are involved in the present suit are Rules 70 and 71, which read as follows:

> "70. In original applications all amendments of the drawings or specifications, and all additions thereto, must conform to at least one of them as it was at the time of the filing of the application. Matter not found in either, involving a departure from the original inven-

> tion, cannot be added to the application even though supported by a supplemental oath, and can be shown or claimed only in a separate application.
>
> "71. The specification and drawing must be amended and revised when required, to correct inaccuracies of description or unnecessary prolixity, and to secure correspondence between the claim, the specification, and the drawing. But no change in the drawing may be made except by written permission of the office and after a photographic copy of the drawing as originally presented has been filed."

STATEMENT OF POINTS.

1. Appellants contend that the lower court erred, in view of this suit being a trial *de novo*, in not following the test of an applicant's right to make claims, which this Honorable Court approved in its decision in the case of *In re Manson*, 45 App. D. C. 563; 238 O. G. 1641, decided on January 2, 1917, and in not holding that plaintiffs' having satisfied, by the evidence herein, the requirements of such test, they are entitled to claims 46, 48 and 49.

2. Appellants contend that the lower court erred in not holding that claims 46, 48 and 49 are supported by the original specification of the Schultz application, in view of that court's finding that the operation of the fuse of such claims is inherent in the fuse structures shown in Figures 1, 4 and 5 of the application drawings and of the trial models (Plaintiffs' Exhibits Nos. 7, 11, and 13, found by the court to be unquestioned) which models were demonstrated by plaintiffs' witness, who the court found was a man skilled in the art and who the court ruled had testified that springs 15, 66 and 90 **must** function in order that a final release of the latch may be effected (see findings of fact 3, 4 and 10, Appellants' App. 14 and 16).

3. Appellants contend that the lower court erred, in view of its findings of fact noted above, in not further ruling that any subject matter in the description of the specification not fully consistent with the actual operation of the

fuse, held to be necessarily inherent in the structure of the drawings, could be amended as provided in Patent Office Rules of Practice 70 and 71 so as to have the specification consistent with the drawings.

4. Appellants contend that the lower court further erred in not finding that since plaintiffs' witness, a man found to be skilled in the present art, had shown that the information in the original Schultz application compelled him to so construct his models (Plaintiffs' Exhibits Nos. 7, 11 and 13) of fuses that they would have the capability and the operation here in question (Appellants' App. 47, 55, 56, 57, 68, 69, 77 and 78), that capability must be regarded as inherent in the application drawings and as a necessary characteristic of the Schultz invention, whether known to or appreciated by Schultz in his original specification.

5. Appellants contend that the lower court erred in not granting the relief prayed as to claims 46, 48 and 49 when the lower court held:

> **"Examination of the drawings (of Schultz application Serial No. 727,250) and the demonstration of models (Plaintiffs' Exhibits 7, 11 and 13) by witness McNulty, is convincing that spring 15 in Fig. 1, spring 66 in Fig. 4, and spring 90 in Fig. 5, perform an inherent function in the downward movement of the fuse tube and presumably to some degree in the ultimate complete release of the latching mechanism." (Finding of Fact No. 3),**

and did not at the same time find that plaintiffs are clearly entitled to such claims, since plaintiffs' witness, a man skilled in the art, was found to have testified that these tube moving springs **must** function in order that a final release of the latch may be effected.

SUMMARY OF ARGUMENT.

1. The present case involves a trial *de novo* under Section 4915 of the Revised Statutes, and during which trial the only evidence adduced was submitted by plaintiffs, and which evidence was of a factual character and was directed to establishing the fact that the subject matter of the three claims 46, 48, and 49 sought by plaintiffs is inherent in the application of the plaintiff Schultz as filed in the Patent Office.

2. The factual evidence adduced by plaintiffs-appellants comprises the testimony of Mr. Peter C. McNulty (a man found by the lower court to be skilled in the art) who produced models Plaintiffs' Exhibits 7, 11 and 13 (found by the lower court to be unquestioned) which, he testified, were fair and accurate representations of the structure of Figures 1, 4 and 5 of the Schultz application as disclosed in the specification of Schültz and as understood therefrom by him.

3. The witness, Mr. McNulty, further demonstrated the models which he had had made and testified wherein the mechanical elements and features of the three claims 46, 48 and 49 sought by plaintiffs were clearly embraced in such models.

4. The defendant-appellee has not, in any way, endeavored to refute the foregoing factual evidence of plaintiffs and, accordingly, to rule against plaintiffs requires a ruling that the witness, Mr. McNulty, on behalf of plaintiffs, was mistaken in his testimony and that the models he had produced as being in accord with the teachings of the specification, could not properly operate in the manner in which these models were demonstrated in open court.

5. The lower court, in its findings of fact, and particularly in findings of fact 3 and 10, found that each of the springs 15, 66 and 90 in the Figures 1, 4 and 5 species respectively performed an inherent function in the ultimate release of the latching means or lever, but erred when it held that, because this function was not specifically set forth in

the specification, the applicant Schultz was not entitled to claims 46, 48 and 49.

6. The statements in the original Schultz application are not inconsistent with the theory of operation required by claims 46, 48 and 49, and even if they were, such statements should not preclude the applicant Schultz from correctly describing what is disclosed in accordance with Patent Office Rules 70 and 71. The tube ejecting spring in each of the three species of the Schultz application, namely springs 15, 66 and 90, at all times exert a downward force on the fuse tube which, upon blowing of the fuse, results in the latching pin being driven past the end of the latching lever after the latching lever has been partially withdrawn, by its own spring, to a point where its end is directly under the center of the latching pin.

7. There is nothing in the claims which specifies that only one spring means must act on the latching lever, and therefore the fact that in the Schultz structure a separate spring is provided for initiating the withdrawal of the latching lever from its engagement with the latching pin on the fuse structure, still does not preclude the structure from satisfying the requirements of the three claims in suit, since the other and larger spring which biases the fuse tube downwardly does and **must** function in the final release of the tube from the latching lever.

8. The law is well established that an inventor is entitled to all of the features and functions inherent in the disclosure of his patent application as understood by those skilled in the art.

9. Since no evidence was adduced in the Patent Office of a refuting character, it follows that for the court to decide this case in favor of the plaintiffs does not result in the court overruling the decision of the Patent Office Board of Appeals which was not based upon this evidence, but which was directed to the question of whether the applicant Schultz had a right to amend the description as to Figure 4 in certain respects; the Board of Appeals having

held that such an amendment would involve new matter and that, hence, the claims here sought likewise involved new matter.

10. It is clear from the foregoing arguments that this is not a case wherein the court is asked to overrule a decision by the Patent Office on the question of patentability; it is truly a trial *de novo* and embraces evidence that was not in any way before the Patent Office, so that that Office or its tribunals could not have passed upon the same. If such evidence had been before the Patent Office, it is not at all unlikely that the decision of the Patent Office would have been different.

ARGUMENT.

Introduction.

The present suit involves a trial *de novo* below in which the appellants sought to and did establish by actual evidence their right to a patent with claims 46, 48 and 49 in suit. As noted in the forepart of this brief, there is no question of patentability of the claims in issue and the appeal hinges solely upon the question of whether the disclosure in the original Schultz application can be said to support these claims, or, in other words, relates to the right of the applicant Schultz to make the claims in his application.

The Fuse Construction of the Schultz Application in Suit.

The invention embraced by these claims pertains to a fuse construction in which a fuse tube is employed to connect two spaced terminals or contacts, which are illustrated in the three species of the Schultz application as being mounted inside of a porcelain box 1-38, normally covered by a hinged door 81 in appellants' charts comprising Plaintiffs' physical Exhibits 2 and 3. The spaced terminals are colored gray and tan, and the fuse tube is colored yellow.

Reference is made to these charts and to the color scheme employed therein for the reason that the testimony of the plaintiffs' expert witness is directly tied, to a large extent, to these two charts and the colored elements illustrated therein.

The fuse tube when in unblown condition is in its uppermost position inside the box, but upon blowing is ejected to the dotted line position best shown in Figures 1 and 4 of the Schultz application. The fuse tube is restrained or held in its uppermost position by a latching or locking lever 28 in Figure 1, 61 in Figure 4, and 85 in Figure 5; the lever in each instance having applied thereto a sepia color in Plaintiffs' Charts Exhibits 2 and 3. This latching lever, however, only comprises one part of the latching mechanism inasmuch as it cooperates with an orange colored latching pin 27 in Figure 1, 60 in Figure 4, and 83 in Figure 5, the pin in each instance being attached directly to the yellow fuse tube.

In addition, in each case the latching lever is pivotally mounted, and is adapted to be turned upon blowing of the fuse out of latching engagement with its cooperating latch pin on the tube. The latching lever, in each species, has a tendency to rotate under the influence of a spring associated with the latching lever which is colored pink in the charts, and in Figures 1 and 4 comprises a small coil spring 33, and in Figure 5 comprises a looped spring 67.

Movement of the latching spring is arrested by means of a dark brown restraining arm 29 in Figure 1, 63 in Figure 4, and 71 in Figure 5. In each instance, this restraining arm is adapted to be connected to one end of a green flexible leader or conductor 24 in Figure 1, 64 in Figure 4 and 88 in Figure 5. This leader extends up into the tube and is anchored in the usual way to the fusible section or link, not shown, in the tube, which upon blowing releases the green leader and the arm connected thereto so that the latching lever is free to turn out of engagement with its orange latching pin.

While in the structure shown in the two species of Figures 1 and 4, the sepia colored lever 28-61 is illustrated as being integral with the restraining arm 29-42, this is not a necessary attribute of the invention in issue since, as shown in Figure 5, the restraining arm 71 may constitute part of a separate dark brown lever 86 inter-related with the sepia colored latching arm 85 for cooperation with the latching arm 85 in normally holding that arm in latched engagement with the orange pin 83.

However, in all three species, there is definitely provided a pivoted latching member or lever construction cooperating with a latching pin on the fuse tube and normally held in that position by means of a connection to one end of the green flexible leader, the other end of which leader extends into the tube and is connected to the fusible section, whereby upon blowing of the fusible section the latching lever is free to be moved out of latching engagement with the orange pin on the fuse tube.

In all three species of the Schultz application a spring, colored in red, is provided for at all times biasing or urging the yellow fuse tube in a downward direction out of the box, so that upon blowing of the fuse the electric gap between the gray and brown terminals can be quickly extended for the purpose of aiding in extinguishing any arc.

In the Figure 4 and Figure 5 species, the tube moving spring in each instance comprises a red coil spring 66-90 encircling the lower portion of the fuse tube. This spring, when the fuse tube is in its uppermost position, is maintained under compression and is held in this condition by the latch mechanism previously described. In the species of Figure 1, the tube biasing spring, instead of being a coil spring, is a leaf spring 15 at the top end of the fuse tube and is likewise colored in red.

Accordingly, it is clear that the energy of each of these three springs, tending to move the fuse tube downwardly, is normally restrained by the latching mechanism so that such latching mechanism has imposed thereon the force of the spring when the fuse tube is in its uppermost position.

The issue presented by the question raised as to Schultz' right to make the three claims in suit revolves around the action of these tube ejecting springs in the three species of the application. More particularly, the question is whether as a matter of fact these red colored springs would, in the actual operation of the fuse upon blowing, exert any force tending to release the latch, it being appreciated that the full force of each of these springs is applied directly to the latch through the orange locking pin which is integral with the fuse tube to which the spring force is being applied by each of the red springs.

The Patent Office Examiner's position was that because the applicant had disclosed the pink latching lever spring 33 in Figure 1, and its counterpart in Figure 4—the pink spring 67, as acting on the latching lever, that spring was the sole one to which the function of releasing the lever could be attributed; notwithstanding the fact that in each case the red spring is of substantially greater size and force, and is at all times applying considerable force to the orange latching pin which is in engagement with the sepia colored latching lever.

Thus it will be appreciated that the issue presented by this appeal does not hinge about the lack of structure for supporting the claims in issue, but rather relates to the question of function of one of the elements, namely the red colored spring 15 in Figure 1, the red colored coil spring 66 in Figure 4, and the red colored spring 90 in Figure 5. The plaintiffs-appellants have constantly urged that they are entitled to all inherent functions of the elements of the fuse structure they have disclosed, and that it is a matter of factual evidence whether any one of these elements will perform any described function consistent with a particular theory of operation, and that in determining this question one must take into consideration the fact that the disclosure of an application is directed to those skilled in the art.

The lower court has, in its findings of fact and conclusions of law (Appellants' App. 13 to 16), found that as a matter of fact the red springs 15-66-90 do in each instance inherently function in the ultimate release of the latch, and has in addition found that the plaintiffs' witness was one skilled in the art and that his models (Plaintiffs' physical Exhibits

7, 11 and 13), showing this function of the springs, have not in any way been questioned or disputed.

Thus we have a situation where it has been ruled that the undisputed factual evidence presented by an expert skilled in the art establishes that the fuse structure, as originally disclosed, has the capability required by the claims in issue.

The court, however, held further in its decision, and said in effect that because there were certain statements in the Schultz specification which, in the court's opinion, appeared to be inconsistent with the theory of operation or function of the spring for moving the tube, the court could not properly find for the plaintiffs. It is with this proposition of law that the present appeal is concerned.

At this point it might be well to note that during the Patent Office proceedings the applicant Schultz, one of the appellants here, did, on appeal to the Patent Office Board of Appeals, emphasize and base his case on the species of Figure 4. However, since the suit below involved a trial *de novo* and the species of Figures 1 and 5 are necessarily parts of the application, the plaintiffs were entirely within their rights in relying upon all, or any one, of these three species as affording a supporting disclosure for the claims on appeal. This right was not disputed by the court below in the trial and, in fact, counsel for the defendant during the trial acceded to the same, as is evident from the quotation hereinbelow (Appellants' App. 88):

> "Mr. Meroni: * * * Now my opponent, Mr. Cochran, who represents the Patent Office, did not interrogate the witness as to Figures 4 and 5, and if Your Honor were to find that these claims are supported by Figures 4 and 5 and were to find that they are not supported by Fig. 1, we would still be entitled to a patent with those claims because our disclosure would support them. In other words, the mere fact that one figure or even two figures do not support the claim still would not preclude your granting us a patent if you found in any one of them an adequate support for the claims.

> "Mr. Cochran: That is right, Your Honor; Mr. Meroni's statement is correct there. I accede to that." (Emphasis ours.)

In addition, Mr. Cochran, the attorney representing the Commissioner of patents, admitted during the trial that since this was a trial *de novo* defendant could take a different position from what the Patent Office took. In this respect, the statement reads as follows (Appellants' App. 74):

> **"Mr. Cochran: I am entitled to take a different position from what the Patent Office took. This is a de novo proceeding. This is not an appeal."**

After Latching Lever Has Been Partially Withdrawn so that Its End is Directly Under Latching Pin, the Tube Ejecting Spring Moves Pin Downwardly, Driving Lever Out of Its Path.

In this part of the brief will be found a chart which illustrates clearly in each of the three species that the tube ejecting spring 15-66-90 is the force which insures the ultimate release of the latch. **It will be noted in each case that after the latching arm 28-61-84 has been partially withdrawn so that its end is beyond the center line of the latching pin, the overpowering force of the spring motivating the tube downwardly then positively drives the pin past the lever, throwing the latching lever clear of its path and thus effecting a final release of the latch.**

In certain of the species, such as in Figure 4, the shape of the latching lever arm 61 is such that the tube moving spring 66 does participate in its initial withdrawal, in addition to effecting the ultimate and final disengagement of the latching pin 60 from this latching arm 61. In other words, as the lever is withdrawn, the latching pin 60 moves downwardly at the same time under the force of the spring 66 acting on the fuse tube 50.

It is likely that the reason the lower court did not fully understand the important part the tube moving spring

CHART ILLUSTRATING POSITIONS OF LATCHING LEVERS 28-61-84 WHEN TUBE MOVING SPRINGS 15-66-90 BECOME EFFECTIVE TO FORCE THEM OUT OF THE WAY OF ROLLERS OR PINS 27-60-83

FIG. 1

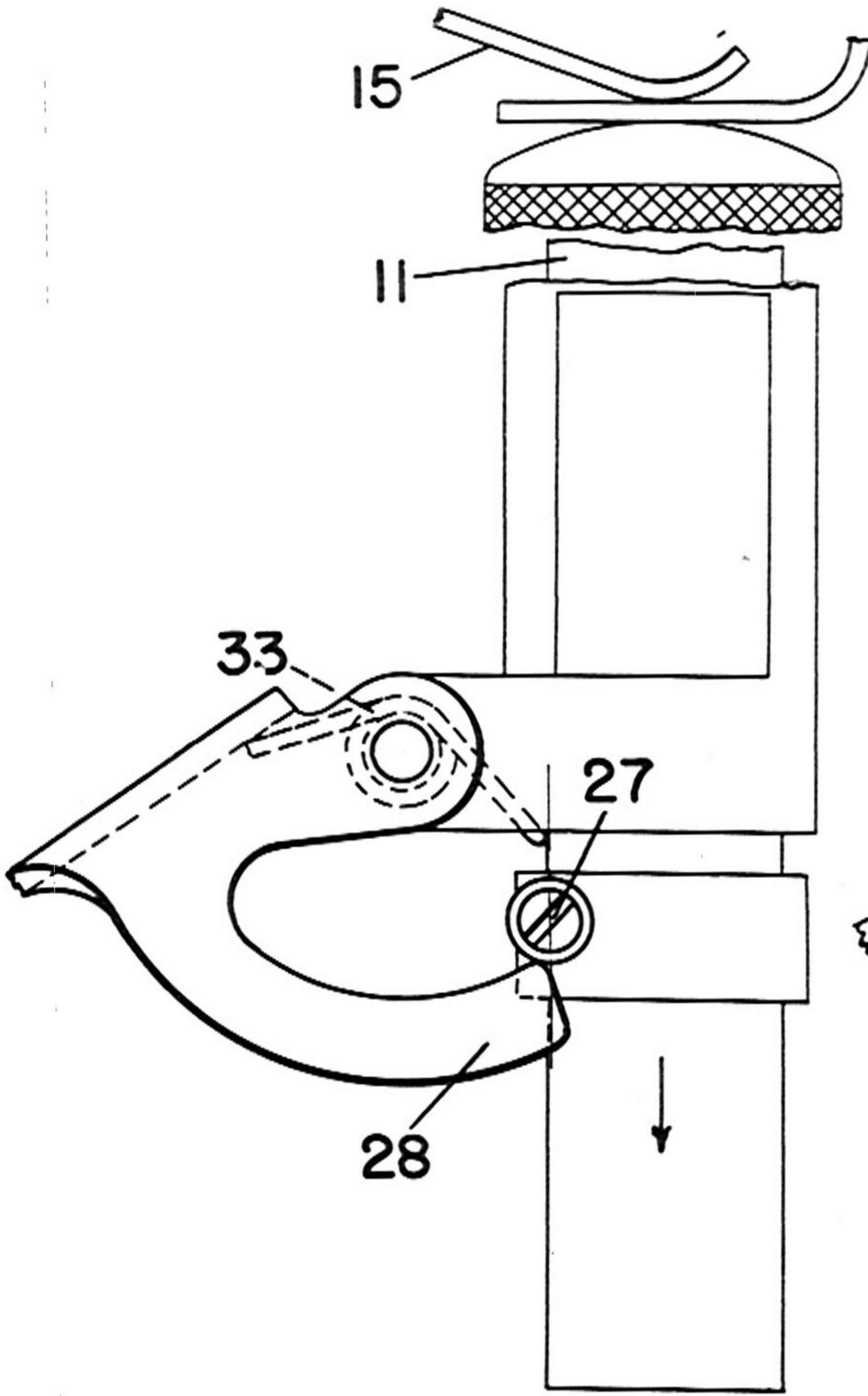


FIG. 4

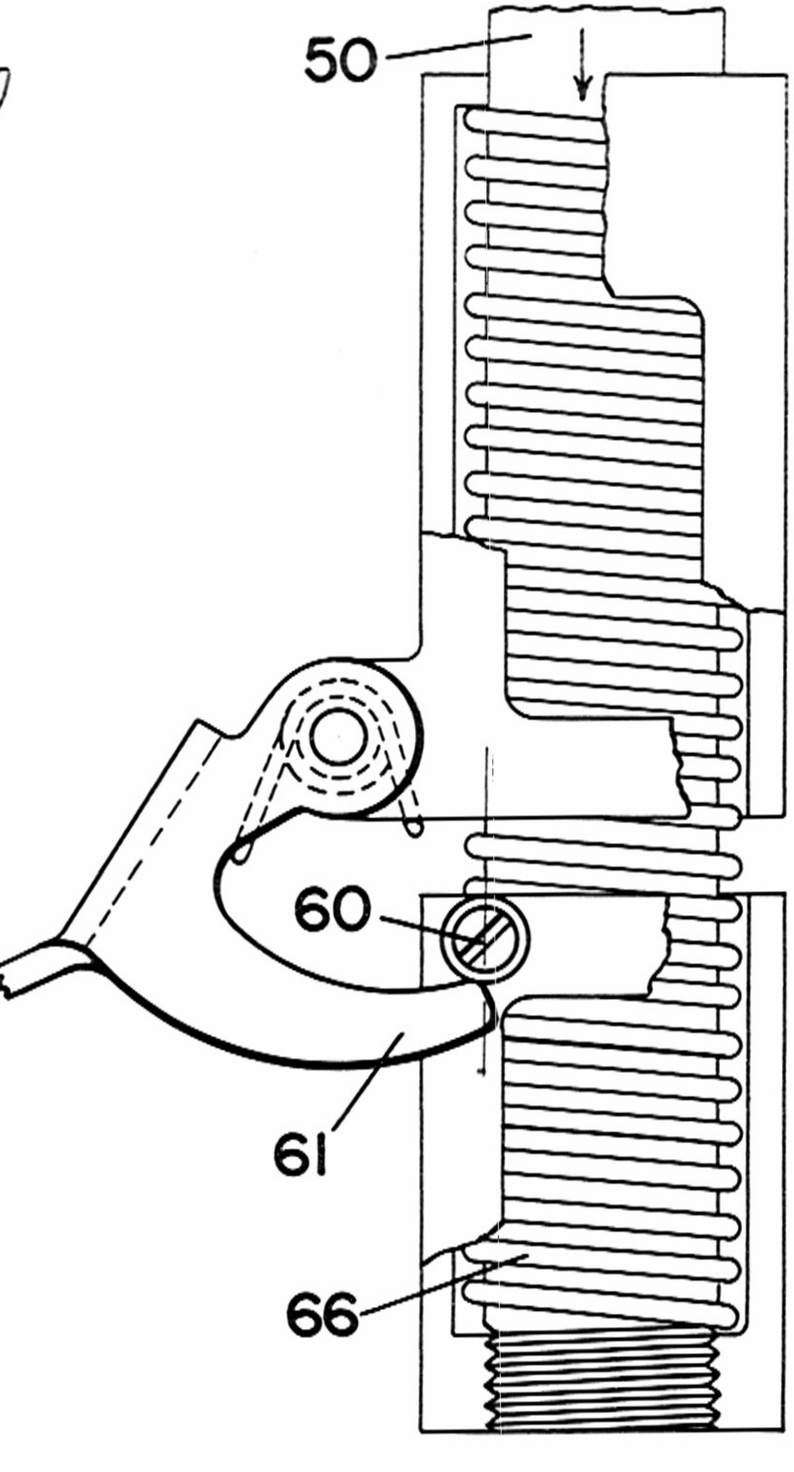
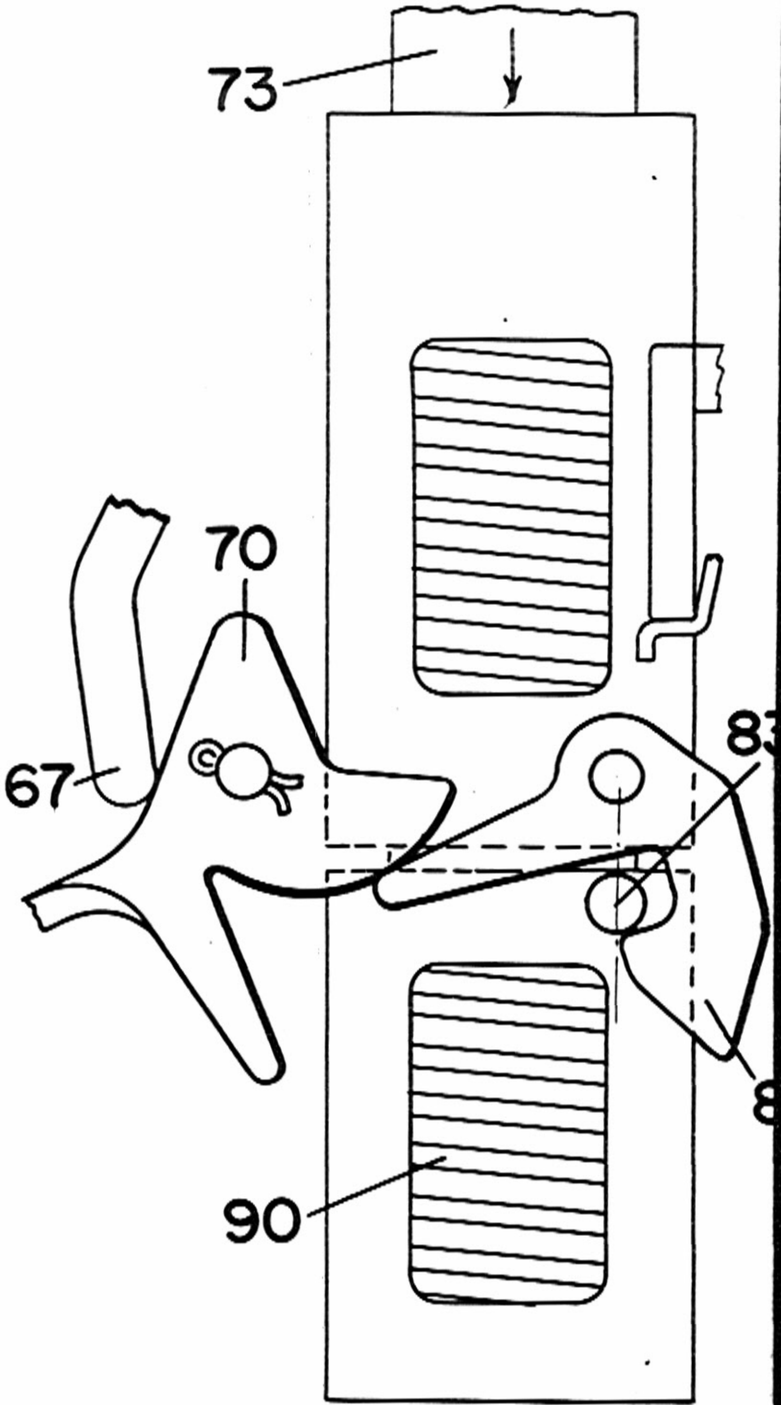


FIG. 5



plays in the release of the latch, in each of the species, was because of the fact that the action is almost instantaneous. Nevertheless, the action of the tube moving spring in finally releasing the latch is of necessity present and inherent in the structure originally disclosed. **The structure disclosed could not operate otherwise.**

Claims in Suit.

During the trial and arguments below, the same issue as to the applicant Schultz' right to make the three claims in suit was common to all three claims; this issue hinging about the proposition of whether the spring (colored red in the aforesaid charts) for moving the fuse tube (colored yellow) downwardly, could be said to function inherently or otherwise in the ultimate release of the latching lever. It is true that in each of these three claims this functional characteristic is defined in different language, but in essence the question of Schultz' right to make them hinges upon the spring for ejecting the fuse tube. Appellants have in the present brief selected claim 48 as being a representative claim, since it is believed that the issue under consideration can be best presented from an analysis of the language of that claim.

Referring, for example, to this claim 48, it should be noted at this time that all of the structural elements of that claim are to be found in the three species of Figures 1, 4 and 5 of the Schultz application, and that the question as to Schultz' right to make the claim hinges solely about the last functional clause, reading "to release said locking means." This clause modifies the means defined immediately thereabove, namely "means for moving the fuse tube longitudinally relative to one of said fuse terminals" which, in each of the three species, comprises the red spring.

In claims 46 this means is defined in terms of a translating means for utilizing the movement of the tube to produce and extend a positive gap when the fuse blows, whereas in claim 49 the means is defined in terms of means for releasing the locking means by relative movement of the fuse tube and one of the ferrules or contacts. **In substance, however, the question of applicant's right to these claims hinges on the single proposition noted above, namely, whether the force of the spring for moving the tube downwardly also inherently must function in the ultimate release of the latching lever after the fuse is blown and the lead is no longer in position to hold the latching lever in latched position.**

On the question of interpretation of claims, this court held in its decision in the case of *The Hydraulic Press Corporation, Inc., and Ernest* v. *Coe,* Commissioner of Patents, decided February 15, 1943 (No. 8210) 549 O. G. 561 and only just reported in the Patent Office Gazette of April 27, 1943, as follows:

> "'Force' * * * may mean simply an operative physical power, without taking account of the exact quantity applied. There is nothing to show that the claims were concerned with exact quantity of force, whether 'drawing,' 'clamping,' or 'retracting.' They were concerned with the application of forces performing different functions, but not with the exact volume of any. There is therefore no more reason for believing that 'drawing force' was used with greater reference to its quantity or amount than was 'retracting force' (claim 7), or 'hydraulic power,' 'with different pressures,' 'the excess pressure,' etc. **We think therefore that the term must be taken, both from the general pattern and purpose of the claims and from its more ordinary meaning, to have been used in its common, rather than its more technical sense.** The history of these claims, as shown by the record, also lends weight to this view. And it derives support from the rule, stated in *In re Carr,* supra, **that the claims must be given the broadest interpretation of which they reasonably are susceptible."** (Emphasis ours)

Likewise, in the present case, there is no reason for assuming springs 15, 66 and 90 would exert a lesser force than would be required for finally kicking the latching pin, integral with the fuse tubes, past and clear of the ends of the previously partially withdrawn latching levers.

Pertinent Portions of the Schultz Specification.

An examination of the objects and features of the Schultz invention as disclosed in his application reveals that it was fully contemplated and disclosed therein that the forced movement of the fuse tube is the vital factor in the operation of the fuse construction upon blowing of the fuse element. For illustration, in the very first object of the specification we find this statement (Appellants' App. 98):

> "Objects of this invention are to provide a novel form of fuse, such as the expulsion fuse type, in which the fuse tube operates first in the manner of an expulsion fuse, **then moves downwardly and increases the gap in the circuit,** and finally comes to rest projecting outwardly from the body portion so as to give a visual signal indicating that the fuse has blown." (Emphasis ours.)

The next paragraph of the first page of the specification is also pertinent and reads as follows:

> "In greater detail, objects of this invention are to provide a housed type of expulsion fuse in which the fuse tube *is biased towards motion axially of the fuse tube and downwardlly and outwardly from the housing and* **is normally restrained from such motion by the fuse link,** *the rupturing of the fuse link releasing the fuse tube and allowing such outwardly biased fuse tube to be projected downwardly and outwardly from the housing."* (Emphasis ours.)

The foregoing italicized portions of the quotations above clearly show that it is the fuse tube itself that is normally restrained from motion by the fuse link, and that reliance is placed on movement of the fuse tube, by reason of it being spring biased, to effect ultimately the movement of the parts necessary to project the fuse tube into its ejected or blown position. The fact that the fuse tube is at all times biased for motion makes it clear that any obstruction in the path of this motion, whether a lever or an other instrumentality, is subjected to the full brunt of the biasing force.

Again, on the third page of the specification, we find a pertinent statement as to the operation of the Schultz fuse construction. This statement reads as follows (Appellants' App. 98, 99):

> "Further objects are to provide **a construction** in which the downward motion of the fuse tube is facilitated, in which latching means are provided for normally holding the fuse tube in elevated position, and **in which means are provided for positively releasing the latching means when the fuse link is ruptured thus insuring the release of the fuse tube."** Emphasis ours.)

Careful consideration of this paragraph reveals that the fuse construction, which it was the aim of the applicant Schultz to provide, was one, first, in which the downward movement of the fuse tube is faciliated; secondly, in which latch means are provided for normally holding the fuse tube in elevated position; and, thirdly, in which means are provided for positively releasing the latching means when the fuse link is ruptured, thus insuring release of the fuse tube.

Now, with reference to this releasing means, it is clear from the disclosure in Figures 1, 4 and 5 that the only positive means for insuring a release of the fuse tube, as well as for releasing the latching means, is the spring that acts on the tube for at all times urging the tube in a direction against the obstruction afforded by the latch. It is the overpowering effect of this spring force that insures the ultimate release of the latch and of the fuse tube.

We find, therefore, ample basis in the specification of the Schultz application for the lower court's finding of fact that the spring acting upon the tube, in each of the species of Figures 1, 4 and 5, does perform a function in the ultimate release of the latch.

Now referring to page 9 of the original specification (Appellants' App. 103), we also find a description of the tube moving spring, namely spring 66, which reads as follows:

> "The operation of this form of the invention is similar to that previously described, with the exception that additionally to the action of gravity, **the fuse tube is urged downwardly by the spring 66. and thus is positively forced outwardly from the housing after the fuse blows."** (Emphasis ours.)

Here again, it is made clear that it is the spring acting on the tube which insures the positive movement of the tube upon blowing of the fuse and the ensuing forced release of the latch. In other words, as soon as the fuse blows, the leader or conductor which was connected to the fuse no longer can hold the latching lever, which is in the path of the downwardly acting force of the spring tending to propel the tube. Hence the tube and partially withdrawn lever must ultimately move under the impelling force of the energy being dissipated from the spring motivating the tube. If this were not a fact, how then could the tube spring, as required by the specification, insure downward motion of the fuse tube upon blowing of the fuse?

It is true that in describing the spring 33 of the Figure 1 species, the applicant Schultz in his specification (Appellants' App. 101) said that the spring 33 when the fuse blows acts to swing the hook-like arm 29, including the latching lever 28, in a cross-wise direction to release the fuse tube 11. This specification, however, does not state that the effect of the force of the spring 15 on the tube is prevented from taking place until spring 33 has functioned. The two springs in this disclosure must of necessity function contemporaneously. **Moreover, since the tube and its integral latching pin are constantly being urged downwardly, it follows that when the latching lever 28 has been partially withdrawn to a point with its end directly under the pin 27 the full force of the spring 15 can then be utilized to drive the pin over and past the end of the lever, thus positively throwing the lever out of the way and ejecting the tube downwardly.** This is inherent in the structure as visualized by one skilled in the art, and has been so testified to by Mr.

McNulty (Appellants' App. 47, 55, 56, 57, 68, 69, 77 and 78).

The operation, in the case of the species of Figure 4, is substantially the same, with the exception that by reason of the particular curvature of the lever 61 the pin moves downwardly at the same time as the lever is being swung, but in any event it is the force of the tube propelling coil spring 66 that ultimately drives the pin over and past the end of the partially withdrawn lever, thus positively throwing the lever out of the path of the pin and ejecting the tube from the fuse box.

It is also true that in describing the species of Figure 5 on page 11 of the original specification (Appellants' App. 105), it is recited that the construction of the latching member is such that the force of the spring urging the tube downwardly is not transmitted to the fuse link, and consequently does not strain the fuse link. This may be true when the latching lever is held in its latching position by the conductor or leader anchored at one end of the same and anchored at its other end to the fuse element.

However, as soon as the fuse does blow and the vertical leg of the lever is moved clockwise, the force of the spring 90 acting on the fuse tube is then effective as soon as the lever 85 has been sufficiently withdrawn relative to the pin 83, so that the portion 84 is moved beyond the central point of the pin 83 and the lever is then driven by the pin out of the path thereof and the fuse tube is ejected from the box.

At no place in the specification is it recited that the construction of the latching lever and any spring acting directly on the same is such as to preclude the force of the overpowering spring acting on the tube and thus positively swinging the latching lever out of the path of the pin in the tube. This force of the spring is ever present, and as soon as the latching arm is withdrawn to such position that the pin can be driven over the end thereof, the pin is driven over the end of the lever by reason of the spring pressure acting thereon; thus propelling the lever into its ultimate released position. This insures a positive release of the latch and ejection of the fuse tube.

The lower court emphasized the fact that original claim 13 included the statement "the releasing motion of said latching means being independent of said first mentioned spring" (spring 90 in Figure 5—Appellants' App. 110). This is a true statement, since the spring on the lever does not depend for its action on the spring acting on the tube, but it does not follow therefrom that the spring acting on the lever prevents the larger spring acting on the tube from functioning in the release of the parts. At most, all this statement means is that the spring associated with the latching member provides an independent force for withdrawing the latching means, **but it does not follow therefrom that the spring moving the tube cannot also act contemporaneously in the final release of the latch.** This interpretation of the disclosure is not a distorted one, and is one that was testified to as a matter of fact by one skilled in the art, plaintiffs' witness, Mr. McNulty, as being his own (Appellants' App. 77-8.) He had no difficulty in constructing the three models, Plaintiffs physical Exhibits 7, 10 and 11 of the three species of Figures 1, 4 and 5, and **his testimony as to the operation of these models, in accordance with the structure and function of the claims in suit, has been undisputed.**

It is easy to perceive, therefore, why the lower court readily found that the spring motivating the tube did perform a function in the final release of the latch. Apparently the only reason the court did not hold with the plaintiffs was because of certain statements in the specification which have been discussed above. Each of these statements, however, has been shown not to be inconsistent with the theory of operation of the claims and as advanced by appellants herein, **nor, as a matter of fact, did it make any difference if such statements were inconsistent, inasmuch as the court did find that the witness McNulty testified (finding of fact 10, Appellants' App. 16) that the spring acting on the tube must function in order that a final release of the latch may be effected.**

In view of the further fact that the question of function or operation here is a matter of fact and the operation contended for by appellants has been established by undisputed factual evidence, the lower court was not warranted in denying the relief prayed merely because of certain statements in the specification, above referred to, which the lower court apparently thought inferred a different operation.

The Claims Originally Presented With the Schultz Application Are Not as a Whole Inconsistent With the Subject Matter of the Claims in Suit.

The claims originally presented with the descriptive matter, and which should be considered as a part of the specification, repeatedly define the fuse structure as embracing a spring for urging the fuse tube downwardly or outwardly. In this respect, attention is directed to original claims 1, 2, 3, 4, 5, 6, 7, 8, 12, 14, 15 and 16 (Appellants' App. 106 to 111). Some of these claims, such as claims 1 to 8, specify means (which is the locking means) controlled by the fuse link to restrain the fuse tube against sliding motion. Other claims, such as claim 11, recite that the latching means is interlocked with means carried by the fuse tube and normally restrains the outward movement of the fuse tube.

It is clear, therefore, that as the downward movement of the fuse tube, under the force of the spring moving the tube, is restrained by the interlocking of the locking pin with the latching lever means, *the pin as well as the lever means is inherently subjected to the force of the spring acting to move the tube.* The lever arrangement, however, is such that the full force of this spring is not transmitted to the link since, in order for that force to be applied to the link, it has to be first transmitted to the lever and thence to the link. By reason of the particular arrangement of the lever, the effect of such force on the link is reduced so as to minimize the strain on the link.

The foregoing interpretation is not inconsistent with the actual original specification description, since in the construction of the descriptive matter we find this statement (Appellants' App. 105):

> "The downward motion of the fuse tube is normally restrained by the interlocking of the pins on the tube with hook-like portions of the latching means."

In addition, it was not shown by the defendant below that any one of the three claims in suit contains any **structural elements** not present in the fuse structures disclosed in the Schultz application. **The contention of the defendant for the most part has been directed to whether the function recited in each of the claims as to the means for moving the tube coacts in the unlocking of the fuse tube.** This contention has been answered by the court below when it found that the springs 15, 66 and 90 for moving the fuse tube did inherently function in the ultimate complete release of the latching mechanism (see findings of fact 3 and 10, Appellants' App. 14-16).

The Patent Office Rules of Practice Clearly Provide that an Applicant May Amend His Application to Include Any Subject Matter that is Inherent in His Original Disclosure.

The Patent Office Rules 70 and 71 previously quoted herein clearly afford an applicant an opportunity to amend the disclosure in his original application so as to include in the application any subject matter that is clearly inherent in and necessarily a part of the original disclosure.

In the Schultz application in suit, no effort was made by the applicant to amend the disclosure with reference to the species of Figures 1 and 5, and the amendment that was filed on July 23, 1937 (Appellants' App. 115, 116), as is evident from the remarks of that amendment, was made solely for the purpose of clarifying the description of the species of Figure 4. More particularly, this amendment was directed to describing the configuration of the lever arm 61 as illustrated in Figure 4, and the fact that the coil spring 66 does, through the roller 60, urge the lever arm 61 in a clockwise direction when the fuse link is severed.

This amendment, however, is not crucial, in that anyone skilled in the art, upon looking at the curvature of the portion of the lever arm 61 engaging the pin 60, will perceive that the arm must move in a clockwise direction under the force of the coil spring 66 when the leader 64 cannot any longer hold the arm in posititon by reason of the blowing of the fuse link. This operation was evident to Mr. McNulty, plaintiffs' witness, who was found by the lower court to be a man skilled in the art.

As a matter of fact, the applicant Schultz filed the amendment in an endeavor to comply with the requirements of Rules 70 and 71 and so as to have the descriptive matter fully consistent with the subject matter illustrated and claimed.

Apparently the Patent Office Examiner seized upon this amendment as justification for his contention that the applicant had not disclosed originally the subject matter of the amendment, notwithstanding the fact that such subject matter is clearly illustrated in Figure 4, and under Rules 70 and 71 the applicant is properly entitled to amend the descriptive matter to conform with the subject matter shown in the drawings.

Decisions of this Court and Other Authorities Clearly Support Appellants' Right to the Three Claims in Suit.

The law applicable to the issues in this suit has repeatedly been announced by this Court of Appeals. Also this Court has promulgated the test that should be adopted in situations of the character involved here. A case directly in point is *In re Manson,* 45 App. D. C. 563, 238 O. G. 1641, decided on January 2, 1917. In that case, this Court said:

> "The test of applicant's right to make the claims of the amendment is well stated in the opinion of the Board of Examiners-in-Chief as follows:

> " 'Did the appellant's application as filed present this inventive idea? The specification made no mention of any tilting action. The only ground upon which it might be held that the application as filed disclosed the tilting action is that this action is inherent in the structure as the same was originally disclosed. **If those skilled in the art making the article from the information furnished in the original application would naturally so construct it that it would have the capability here in question, this capability must be regarded as inherent in the applicant's disclosure and a necessary characteristic of his invention whether originally known to or appreciated by him or not'."**

We have in the present case on appeal a situation which appellants contend fully meets all of the requirements of the test announced above and that, if that test had been invoked below, the lower court's decision should have been in favor of the plaintiffs, particularly in view of the findings of fact that were made by the lower court. Not only did the court find that the models which had been adduced by plaintiffs and fully testified to by plaintiffs' witness, Mr. McNulty, a man whom the court found to be skilled in the art, were unquestioned models, but the court went much further and found that the springs 15, 66 and 90 actually did perform an inherent function in the ultimate release of the latching mechanism, and that such springs did exert some influence on the complete release of the latch. These findings of fact, according to appellants' contention, fully show that plaintiffs below had satisfied and made the requirements of the test announced by this court in the aforesaid case of *In re Manson.*

An early decision of this court pertinent to the instant case is that of *Paris* v. *Burke,* 52 App. D. C. 52, 281 Fed. 429; wherein this Court approved the ruling of the Patent Office that it is immaterial whether the inventor fully understood what took place in his device or whether he used apt terminology in describing what is shown.

Attention is also directed to the decision of this Court in the case of *Rogers et al.* v. *Aikman*, 51 App. D. C. 218, 277 Fed. 617; wherein this Court approved of the following ruling of the Commissioner of Patents:

> "Aikman's disclosure of the construction and operation of his device is sufficiently clear to to enable those skilled in the art to make and use it. **It is not fatal to his case that he failed specifically to describe the effect on the operation of his exhaust valve of the difference in pressure** within and without his pump chamber, the existence of which difference in pressure is made indisputably clear by what he has described. **Those skilled in the art would not need to be told what effect the difference in pressure would have upon the exhaust valve of Aikman,** knowing as they would, from the description he has given, that at the particular phase of the operation of his device under discussion a difference of pressure within and without his pump cylinder exists." (Emphasis ours.)

Applying the practice approved in that case to the instant case, we can properly state that those skilled in the art of fuses certainly would not need to be told that the spring moving the fuse tube downwardly in each of the species of the Schultz application does exert a latch releasing force. Moreover, the fact that the applicant Schultz did not specifically so describe the effect of the spring on the release of the latching member does not result in such a fatality as to be held to preclude him from obtaining claims 46, 48 and 49 here in issue directed to that function.

Another decision of this court directly in point is to be found in the case of *Ellis* v. *Shaw*, 54 App. D. C. 185; 295 Fed. 1006, wherein this court said:

> "Furthermore the boards as described in the application are in fact capable of expanding and contracting under a force less than that necessary to crack plaster. **It is true that Shaw did not state the latter function in his specifications or claims; nevertheless it was inherent in the disclosure of his application, and he is entitled to make the claim accordingly."** Emphasis ours.)

So, too, in the present application of Schultz, the fact that Schultz did not state that the spring moving the tube downwardly functions in the release of the latching lever should not be held to preclude Schultz from claiming the same since, according to those skilled in the art, it is inherent in the disclosure of his application.

Another case of interest is *Prescott et al.* v. *Swain, et al.*, 57 App. D. C. 306, 22 Fed. (2d) 1004, wherein this court on page 1005, held as follows:

> "A reading of Swain's specifications dated March 15, 1918, discloses that the demountable and quick detachable rim of the counts is specifically described therein, permitting of the ready removal of the tire alone or the tire jointly with the rim. This leaves in question only the provision for the removal of the disc wheel from the hub. *It is true that Swain makes no specific reference or claim to this in his application, nevertheless he shows a disc body attached to the hub by means of bolts and nuts in such a manner as to leave the disc readily removable from the hub, and the function in question is inherent in the disclosure.* As said by the Commissioner: 'If a wheel were made in the manner disclosed by Swain, it would necessarily infringe, if invented later, or anticipate, if invented earlier, the counts of the issue.' We think, therefore, that Swain was entitled to an award of priority. *Rogers & Ball* v. *Aikman,* 51 App. D. C. 218, 277 F. 617; *Paris* v. *Burke,* 52 App. D. C. 69, 281 F. 429; *Ellis* v. *Shaw,* 54 App. D. C. 185, 295 F. 1006." (Emphasis ours)

A decision of the District Court of Columbia likewise following the practice announced above is to be found in the case of *Mills* v. *Coe,* 40 U. S. P. Q. 330. decided January 18, 1939. The syllabus of that case reads as follows:

> "Claims having been rejected for failure of disclosure, applicant under R. S. 4915 produced expert who testified that general statements in specification were sufficient to inform a chemist, and court, in view of this undisputed evidence, allowed the claims."

In the case of *John W. Bloodhart* v. *Martin W. Levernier,* 17 U. S. P. Q. 188; 191, decided on April 12, 1933 by the Court of Customs and Patent Appeals, that court made the following statement, ruling as to what a disclosure in an application embraces:

> "Although the 'plug' or 'cap screw' was not fully described in appellee's specification, it is obvious that its 'shouldered cylindrical bearing surface,' was essential to the proper performance of its functions, and that the disclosure in the drawings of such bearing surface was not accidental. Furthermore, the drawings may properly be used as an aid in interpreting the specification. *Permutit Co.* v. *Graver Corp.,* 284 U. S. 52, 60.
>
> **"We are of the opinion that the rotatable feature of the involved invention is inherent in the structure and use of the apparatus disclosed in appellee's original application, and that the amendment thereto does not involve any material addition to, or variance from it, and that, therefore, appellee is entitled to make the counts in issue."** (Emphasis ours)

The practice of the Court of Claims of the United States is also in accord with the practice promulgated by this court, and in this respect attention is directed to the case of *Martin* v. *United States,* 37 U. S. P. Q. 55, 58, decided March 7, 1938, wherein the following ruling was announced by the court as to how a specification should be construed:

> **"A mistake in a particular drawing does not render a patented device inoperative or prevent the court from considering the entire disclosure in the specification and other drawings of the patent as a proper reference in the prior art if, by considering the language of the specifications and the drawings, it is clear what the patentee intended by the language used in the specifications.**
>
> * * * * * * * * *
>
> **"This language, when considered in connection with Fig. 2, as well as Fig. 3, of the patent, clearly discloses to a man skilled in the art a closure for the fuselage opening which is operated automatically upon the extension or retraction of the landing gears."** (Emphasis ours)

Further Discussion of Authorities and of Their Application to the Facts of this Case.

In substance, it was the position of counsel for the defendant-appellee that the applicant Schultz, although he illustrated a spring for forcing the fuse tube downwardly past the latching mechanism, is not entitled to claim the inherent function of that spring in its relation to the latching mechanism because all of the functions of the spring are not, in appellee's opinion, described with sufficient particularity.

The defendant has not questioned—nor could he properly do so—the fact that the combination of elements involved in the three claims of this suit are all shown in the drawing of the Schultz application Serial No. 727,250. Neither has defendant denied the fact that the spring for moving the fuse tube downwardly in the apparatus claimed will function in the manner claimed. *Thus, the defendant has not actually denied the fact that the subject matter claimed in the three claims here in suit is inherent in the apparatus that is fully and completely illustrated in the drawings of and described in the Schultz application.*

Rather, the position of the defendant is apparently that the applicant Schultz should have stated more specifically that the downward force of the spring acts on, and participates in, the unlatching operation. Defendant makes this contention notwithstanding the fact that the specification of the Schultz application says that the fuse tube is biased downwardly and that the latching mechanism is subjected to the force of the spring motivating the tube. For illustration, as noted before, the original claims that were filed with the Schultz application, and are to be considered as a part of the disclosure, clearly call for a spring for urging the fuse tube downwardly or outwardly. In the case of some of the claims, such as claim 11, it is recited that the locking means or lever restrains the outward motion of the fuse tube. **Obviously, if this outward or downward move-**

ment of the spring-urged fuse tube is restrained by the locking lever, it follows that the locking or latching means is subjected to the force of the spring.

The fact that the original claims, which. in the case of the Schultz application, were seventeen in number, are to be considered as a part of the specification is firmly established in our Patent Office practice. That is to say, the word "specification" as employed in the Patent Laws when used without the word "claim" means description and claim (*Wilson* v. *Coon*, 6 Fed. 611). It should be noted that this case was reversed on other grounds but that the foregoing principle is still the law of the land.

Now, at most, the defendant's contention simmers down to the question of whether the applicant was under obligation, in order to satisfy the requirements of the Revised Statutes, to set forth more specifically the function of the spring for forcing the fuse tube downwardly and in coacting with the latching mechanism. In this regard, it is submitted that an applicant is entitled to all the inherent functions and features of a structure otherwise fully disclosed.

The patent specification is directed to those skilled in the art and if, as a matter of fact, it is clear to them how the device disclosed can be constructed in the manner claimed, that is sufficient. An early and leading case on this proposition of law is the frequently cited case of *Eibel Process Company* v. *Minnesota & Ontario Paper Company*, 261 U. S. 45, decided by the United States Supreme Court on February 19, 1923, wherein Mr. Chief Justice Taft delivered the opinion of the Court and, among other things, held as follows (pages 65 and 66):

> **"This patent and its specifications were manifested to readers who were skilled in the art of paper making and versed in the use of the Fourdrinier machine. The evidence discloses that one, so skilled, had no difficulty, when his attention was called to their importance, in fixing the place of the disturbance and ripples to be removed, or in determining what was the substantial pitch needed to equalize the speeds of the stock and wire at that place."**

In the case on appeal here, the plaintiffs' witness, Mr. Peter C. McNulty, who was qualified as an expert skilled in this art, testified under oath that he constructed from the disclosure in the Schultz application the three models of Figures 1, 4, and 5 and identified as Plaintiffs' Exhibits 7, 11, and 13, and he also testified that these models embodied all of the mechanical elements and features of the three claims 46, 48, and 49 here in issue.

This factual evidence has not been refuted in any way by the Patent Office. Indeed, the solicitor for the Commissioner of Patents confined his cross-examination of Mr. McNulty solely to questions propounded as to the portions of the specification relating to Figure 1 and did not undertake in any way to examine the witness as to Figures 4 and 5. **Counsel for the defendant did this notwithstanding the fact that he admitted of record that, if this court were to find that the subject matter of the three claims at bar is supported by any one of the three different species shown in Figures 1, 4, and 5, that would be sufficient for this court holding that the applicant Schultz is entitled to a patent.**

Aside from this cross-examination of Mr. McNulty as to Figure 1, there was no effort whatsoever made by the defendant to refute the factual evidence adduced on behalf of plaintiffs directed to establishing that one skilled in the art, namely Mr. McNulty, had no difficulty in constructing from the original specification of the Schultz application the three models—Plaintiffs' Exhibits 7, 11, and 13; the operation of which models was satisfactorily demonstrated by the witness in open court and has not been questioned.

We have, then, a situation wherein the defendant's attorney orally argued that the disclosure is inadequate and, on the other hand, we have the testimony, on behalf of plaintiffs of an expert witness skilled in this art, to the effect that he did construct from the disclosure fuse structures satisfying the mechanical requirements of the three claims in issue. **It would seem that a mere oral argument of the defendant's counsel in the absence of any factual evidence, should give way to the conclusive factual proofs adduced on behalf of plaintiffs.**

A pertinent decision along this line is that of the United States Court of Customs and Patent Appeals in the case of *Doherty* v. *Dubbs,* 20 U. S. P. Q. 145, decided on January 22, 1934, wherein **Judge Garrett held that inoperativeness is primarily a question of fact and only factual testimony is of any material value in determining the question; inoperativeness is not established by evidence of one who has made no test.**

The Federal District Courts have long followed the practice, in construing a patent specification, of considering what is manifestly inherent in the disclosure made. An interesting case in this respect is that of *Prescott et al.* v. *Swain,* 39 F. (2d) 241, decided on September 20, 1929 by Judge Jones and wherein Judge Jones ruled as follows (page 242):

> *"If from an examination of the patent claims and drawings the construction claimed is disclosed or is manifestly inherent in the disclosure thus made, and the construction is operative, it is not fatal to invention that such construction is not prescribed in precise terms in the patent. The real issue was whether Swain disclosed a demountable rim; that is, one capable of application or removal with the tire affixed or without detaching the tire from the rim."*

So, too, in the case on appeal here, the relationship of the fuse tube actuating spring and the latching mechanism is sufficiently described and illustrated in the drawing that it is manifestly clear to anyone skilled in the art that the spring, in at all times urging the tube downwardly, must act against the latching means. **This is particularly true since, if it were otherwise, there would have to be provided some means for preventing the joint action of this spring and the spring for rotating the latching arm.** There is no line of demarcation between the action of these two springs.

As disclosed in the drawings, and as testified to by Mr. McNulty in considerable detail, the action of these two springs is joint, and it is not feasible to divorce them and say that the action of the spring for moving the tube is arrested so as not to come into play until the spring acting on the latching lever has completed its function. The forces of these springs are applied contemporaneously, and there is no line of cleavage between the two forces. This is evident to anyone skilled in the art who follows the teaching in the drawings in the light of the specification.

One skilled in the art building the fuse construction shown in either Figures 1, 4, or 5 would inevitably arrive at a construction such as that represented by any one of the three models, Plaintiffs' Exhibits 7, 11, and 13, which Mr. McNulty testified were accurate and fair embodiments. This was not in any way questioned by the defendant.

The action of the spring for moving the fuse tube in effecting the ultimate release of the locking mechanism is the natural result flowing from the operation as taught in the disclosure and is the result that anyone skilled in the art would expect. In this respect, attention is directed to the decision of the United States Court of Customs and Patent Appeals in the case of *Hansgirg* v. *Kemmer*, 102 F. (2d) 212, decided February 27, 1939, in which that court said (page 214):

> "If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient."

Even if Schultz had said nothing about the function of the spring for moving the tube, still if it were clear from the drawing of his application that that spring did exert a downward force on the fuse tube, that would have been sufficient. In *Brand* v. *Thomas*, 96 F. (2d) 301, decided by the United States Court of Customs and Patent Appeals on April 25, 1938, the Court passed upon a somewhat similar situation, and in so doing said (page 303):

> **"The doctrine which Thomas seeks to apply here is one quite similar to the doctrine of inherency. If one discloses a device in a patent application that must inherently do a certain thing, he necessarily discloses that function or that thing, even though he says nothing concerning it. But here is a finding of the Board, unquestioned by the appellee. that there would be no particular reason, unless the inventor was copying certain patents in the prior art, to place the totalizers in alignment."**

Another pertinent decision is to be found in the case of *Hemolin Co.* v. *Harway Dyewood & Extract Mfg. Co. et al.*, 138 Fed. 54, wherein the Circuit Court of Appeals (2nd) on page 55, held as follows:

> **"Defendants' answer to this contention is that there is no statement in the patent to this effect. But it is well settled that, when a patent contains a sufficient disclosure of the claimed invention, it will not be invalidated either by the failure of the patentee to state the causes which produce the operation, or by a mistaken statement as to the reasons therefor. The sufficiency of the disclosure and the novelty and utility of the result are the sufficient considerations for the grant."**

It has also been long established that, even though a patentee does not fully understand his own mechanism, that fact in itself will not invalidate the patent if it describes an operative structure. (*Marconi Wireless Telegraph Co. of America* v. *De Forest Radio Telephone & Telegraph Co.*, 243 Fed. 560.)

It is also recognized in the Patent Office itself that, where a device has two possible modes of operation—one of which is an operative one, and one of which is inoperative—the patent application should not be rejected as inoperative. As to this point, attention is directed to the case of *Ex parte Ricker*, 25 U. S. P. Q. 296, wherein the Patent Office Board of Appeals, on page 297, held as follows:

> **"Where the device thus has two possibilities, one in which it would be clearly operative and the other in which it could be rendered inoperative under certain conditions, it is regarded as clear that the claims for the device should not be rejected as inoperative.**
>
> "We consider that applicant has clearly demonstrated that the device is operative under conditions where he wishes to use it, namely, in wells having only small production. We hold that the claims are allowable." (Emphasis ours.)

In addition, even though the specification may have some portions thereof that are inaccurate and inconsistent with the general knowledge afforded by the disclosure to those skilled in the art, the patent still should not be held inoperative. In this regard, attention is directed to the case of *S. S. Hepworth Company et al.* v. *Penick & Ford, Ltd., et al.*, 4 U. S. P. Q. 394, wherein the District Court of Delaware, on pages 394 and 395, held:

> **"Patent was held not inoperative when it was necessary to rely on one isolated sentence, rather than whole specification, and go against knowledge of those skilled in the art to find it inoperative."**

The defendant, during the course of the trial below, referred to the decision of the Supreme Court of the United States in the case of *Permutit Co.* v. *Graver*, 284 U. S. 52, decided November 23, 1931. That case, however, is not pertinent since, there, the patentee endeavored to extend his claimed invention so as to embrace a combination not in any way embraced by the disclosure.

There is no question in the present suit about the patentee having disclosed the elements of each of the claims. *The sole question raised is whether the functional characteristic recited in each of the claims is inherent in the structure which is fully described in the Schultz specification.* This is an entirely different proposition and does not constitute an effort on the part of Schultz to claim something other than what he had fully disclosed and was claiming all the time. Schultz may not have used the exact language of the claims here sought in his original claims with regard to the inherent functional characteristics of his fuse structure, but these characteristics were inherently present in the structure that he did claim.

A case that is more in point on the situation is to be found in the famous case of *Stromberg Motor Devices Co. v. Zenith Carburetor Co.*, 254 Fed. 68, decided by the Circuit Court of Appeals for the Seventh Circuit in which Circuit Judge Baker held as follows (page 81):

> **"We do not inquire whether Richard was right in his theory. A patentee is entitled to all the benefits of his invention whether he apprehends and states them or not. He must be given full protection in his claims whether he has explained the theory of the operation of his device correctly, erroneously, or not at all. Against an infringer he must be allowed a range of equivalency that is commensurate with his actual contribution to the art. He is not to be limited to particular formation or location of parts, unless the limitations are embodied in the claims themselves or are necessarily imposed by the prior art."**

At most, all that Schultz is endeavoring to obtain in the claims he seeks here are claims directed to his invention as originally disclosed but, in addition, defining the functional advantage derived by the interrelationship of the elements specifically described and illustrated in the original application.

CONCLUSION.

In conclusion, it is submitted that the new evidence adduced on behalf of plaintiffs below is unequivocal, unrefuted, and carries such conviction that this court is fully justified in overruling the lower court's decision and holding that a patent should be granted to plaintiffs embracing the three claims in suit, namely claims 46, 48 and 49, since the tube ejecting spring (15-66-90) inherently operates and must function in the final release of the latch.

Respectfully submitted,

Charles W. Hills, Jr.,
Charles F. Meroni,
Attorneys for Appellants.

William A. Smith, Jr.,
Of Counsel.

APPENDIX

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IN THE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA.

No. 8491

LINE MATERIAL COMPANY, A CORPORATION, AND
WILLIAM O. SCHULTZ, *Appellants,*

v.

CONWAY P. COE, COMMISSIONER OF PATENTS,
Appellee.

Appeal from the Judgment of the District Court of the United States for the District of Columbia.

APPENDIX TO BRIEF FOR APPELLANTS.

I.

PLEADINGS, DOCKET ENTRIES AND OTHER PAPERS DESIGNATED BY APPELLANTS.

1 Endorsed: Filed Aug 3—1942 Charles E. Stewart, Clerk

In the District Court of the United States
For the District of Columbia

Civil Action No. 16642.

LINE MATERIAL COMPANY, a corporation, 800 North 8th Street, Milwaukee, Wisconsin, and WILLIAM O. SCHULTZ, 809 Marshall Avenue, South Milwaukee, Wisconsin, *Plaintiffs,*

v.

CONWAY P. COE, Commissioner of Patents, *Defendant.*

Bill of Complaint for Letters Patent

To the District Court of the United States for the District of Columbia.

The plaintiffs herein for their Bill of Complaint allege:

1. The plaintiff Line Material Company is a corporation organized and existing under the laws of the State of Delaware and having its principal offices and place of business in the City of Milwaukee, County of Milwaukee, and State of Wisconsin.

2. The plaintiff William O. Schultz is a citizen of the United States and a resident of South Milwaukee, in the County of Milwaukee, and State of Wisconsin.

3. The defendant Conway P. Coe is the Commissioner of Patents of the United States whose official residence is the District of Columbia and is sued as Commissioner of Patents of the United States.

2 4. This Bill is filed in accordance with the provisions of Federal laws of the United States as provided for under Revised Statute 4915 (Title 35, Par. 63).

5. Prior to May 24, 1934, the plaintiff William O. Schultz was the original, first and sole inventor of certain new and useful improvements in Fuse Constructions not known or used before his invention thereof and not patented or de-

scribed in any printed publication in this or any foreign country before his invention thereof or more than two years prior to his application for patent therefor as recited hereinafter, and not in public use or on sale in this country prior to the invention and discovery thereof by said William O. Schultz or for more than two years prior to his application therefor as recited hereinafter, and for which invention no application for Letters Patent had been filed by him or his legal representatives or assigns in any foreign country more than twelve months prior to his said application for Letters Patent of the United States, as hereinafter recited, and which invention had not and has not been abandoned.

6. That being, as stated, the original, first and sole inventor of such invention and entitled to a patent therefor, the said William O. Schultz on or about May 24, 1934, duly filed in the United States Patent Office an application for Letters Patent for said invention, said application complying in all respects with the requirements of the law in such cases made and provided; that the said application was given a filing date of May 24, 1934, and Serial No. 727,250.

7. That by proper instrument in writing duly
3 signed and recorded in the United States Patent
Office, plaintiff William O. Schultz duly assigned and transferred his entire right, title and interest in and to the said application Serial No. 727,250 to the said plaintiff Line Material Company.

8. Since the filing of said application, said application has been duly prosecuted, all of the laws of the United States and all of the rules of the Patent Office with respect to the filing and prosecution of said application having been duly complied with.

9. The said application has been passed upon by the Primary Examiner who finally rejected claims 46, 48 and 49, which claims are reproduced herewith:

46. In a fuse, an outer fuse tube having spaced terminals, there being relative movement between said tube and one of said terminals, a fuse link in the tube, and means for translating the relative movement between said tube and ter-

minal to produce a positive gap and extend said gap when the fuse link blows, said means comprising a lever pivoted to the relatively movable terminal, said link being attached to the lever.

48. In combination, a pair of contacts, a fuse for connecting said contacts, said fuse comprising a fuse tube having spaced terminals and being movable relative to one of them, means for locking the fuse to at least one of said contacts, and means for moving the fuse tube longitudinally relative to said one of said fuse terminals to release said locking means.

4 49. In combination, a pair of contacts, a fuse for connecting said contacts, said fuse comprising a fuse tube having spaced ferrules providing terminals, said tube being movable relative to one of said ferrules, means for locking the fuse to at least one of said contacts, and means for releasing said locking means by relative movement between the fuse tube and said one of the ferrules of said tube.

10. During the prosecution of said application Serial No. 727,250, such application was involved in the following interferences:

Int. No. 72,801	Ramsey v. Schultz
Int. No. 72,802	McCluskey et al v. Ramsey v. Schultz
Int. No. 73,033	Williams v. Ramsey v. Schultz

and plaintiff William O. Schultz was senior party in all of the said interferences.

11. Claims 46, 48 and 49 aforesaid were involved in these said interferences and appeared in such interferences as follows:

Claims	Counts	Interferences
46	1	72,801
48	1	72,802
49	1	73,033

12. During the prosecution of the above interferences, the plaintiffs asserted their right to these claims 46, 48 and 49, which claims appeared in these interferences as the above

identified counts; that the Primary Examiner, in his decisions of June 10, 1937, on motions involving the said application Serial No. 727,250, held that the plaintiffs were not entitled to these claims on the ground that the disclosure of said application Serial No. 727,250, particularly Figure 4 thereof, may have been an accidental disclosure.

13. In an amendment dated July 14, 1937, the plaintiff William O. Schultz duly filed the following amendment for entry on Page 9 of his specification, after line 7:

"It will be obvious from the disclosure in Fig. 4 that the coil spring 66 will, through the member 59 and roller 60, urge the rocking contact 42 to move in a clockwise direction, and that it will so move the contact 42 when the fuse link 64 is severed, because that portion of the arm 61 contacting with the roller 60 is extended in an upward eccentric direction relative to the axis of rotation of the contact 42."

The amendment was supported by a supplemental oath of the plaintiff William O. Schultz and complied fully with Rule 48 of the Patent Office Rules of Practice authorizing such supplemental amendments.

14. Interlocutory appeals were taken by the plaintiffs to the Board of Appeals of the United States Patent Office in the above identified interferences and the action of the Primary Examiner was affirmed by the Board of Appeals.

15. In due course this application Serial No. 727,250 went back to the Primary Examiner for ex parte consideration and the Primary Examiner thereupon finally rejected claims 46, 48 and 49 on the ground that such claims involved new matter, and required the amendment set forth in paragraph 13 of this Bill to be canceled on the ground that such amendment involved new matter.

16. After the final action by the Primary Examiner, plaintiff William O. Schultz appealed ex parte to the Board of Appeals of the Patent Office and directed the attention of the Board of Appeals to Rules 70 and 71 of the Patent Office Rules of Practice, which rules are as follows:

6 Rule 70. In original applications all amendments of the drawings or specifications, and all additions thereto, must conform to at least one of them as it was at the time of the filing of the application. Matter not found in either, involving a departure from the original invention, can not be added to the application even though supported by a supplemental oath, and can be shown or claimed only in a separate application.

Rule 71. The specification and drawing must be amended and revised when required, to correct inaccuracies of description or unnecessary prolixity, and to secure correspondence between the claim, the specification, and the drawing. But no change in the drawing may be made except by written permission of the office and after a photographic copy of the drawing as originally presented has been filed.

The Board of Appeals affirmed the Primary Examiner and held that claims 46, 48 and 49 and the amendment set forth in paragraph 13 of this Bill involved new matter but did not mention or discuss Rules 70 and 71.

17. Thereafter plaintiff William O. Schultz requested the Board of Appeals to reconsider their decision and specifically asked the Board of Appeals why plaintiff was denied the right to amend his specification in agreement with his original disclosure, particularly Figure 4 of his original drawings, as allowed him by Rules 70 and 71 of the Patent Office Rules of Practice.

18. The Board of Appeals did not alter their decision and did not conform to Rules 70 and 71 of the Patent Office Rules of Practice and did not state or discuss any reason why plaintiffs' rights under Rules 70 and 71 were abridged.

19. The Commissioner of Patents, by the Board of Appeals contends that claims 46, 48 and 49 and the amendment to the specification set forth in paragraph 13 of this Bill involved new matter.

7 20. Plaintiffs disagree with the contention of the Commissioner of Patents and contend that they are

entitled to the allowance of claims 46, 48 and 49 based on Schultz's original disclosure.

21. Plaintiffs disagree with the contention of the Commissioner of Patents and contend that they are entitled to describe fully the operation of the modified form of the invention shown in Figure 4 of the original drawings, and that no change is required in the unquestioned disclosure of Figure 4, and that they are entitled to have the amendment set forth in paragraph 13 of this Bill entered in and form a part of the specification.

22. The Commissioner of Patents is bound by Rules 70 and 71 of the Patent Office Rules of Practice.

23. Plaintiff William O. Schultz further states that the said invention is new, useful, and was not known or used by others before his invention thereof and not patented or described in any printed publication in this or any foreign country before his invention thereof, or more than two years prior to his application Serial No. 727,250 for patent therefor and was not in public use or on sale in this country for more than two years prior to the said application and was not patented in any foreign country by him or his legal representatives on an application filed more than twelve months prior to his said application for United States Patent and has not been abandoned.

24. No appeal to the Court of Customs and Patent Appeals has been taken from the decision of the Board of Appeals affirming the action of the Primary Examiner in denying claims 46, 48 and 49 to plaintiffs herein, or denying plaintiffs' right to amend the specification.

8 Wherefore, plaintiffs pray that this Honorable Court decree that the Commissioner of Patents be directed to allow the claims set forth above to the plaintiffs herein, or such part thereof or such other claims as upon hearing the Court may find patentable, and to direct the Commissioner of Patents to allow the amendment to be made to the specification, and pray for such other and further relief as the Court may deem meet and just; and

that a subpoena ad respondendum directed to Conway P. Coe as the Commissioner of Patents of the United States, be issued out of and under the seal of this Honorable Court, requiring him to appear and answer unto this Bill of Complaint (but not under oath, an answer under oath being hereby expressly waived), and to do and receive whatever this Court may order in the premises.

LINE MATERIAL COMPANY

By A. G. STEINMAYER
Vice-President
WILLIAM O. SCHULTZ

Attorney for Plaintiffs:
ARTHUR R. WOOLFOLK,
1238 First Wisconsin Nat'l Bk. Bldg.,
Milwaukee, Wisconsin.

Of Counsel:
CHESTER W. BROWN,
4506 W. Keefe Avenue,
Milwaukee, Wisconsin.

Solicitor and Counsel:
WATTS T. ESTABROOK,
National Press Building,
Washington, D. C.

9 STATE OF WISCONSIN
Milwaukee County ss:

This 28th day of July, 1942, personally appeared before me the undersigned, the above named A. G. Steinmayer, and being duly sworn did depose and say that he is the Vice-President of the Line Material Company, one of the plaintiffs named in the foregoing Bill, that he has read the foregoing Bill, and that the same is true to the best of his knowledge and belief.

A. G. STEINMAYER

Subscribed and sworn to before me this 28th day of July, 1942.

A. PRATT
Notary Public,
Milwaukee County, Wis.

My commission expires January 9, 1944.

STATE OF WISCONSIN
Milwaukee County ss:

This 28th day of July, 1942, personally appeared before me the undersigned, the above named William O. Schultz, one of the plaintiffs named in the foregoing Bill, and being duly sworn did depose and say that he has read the foregoing Bill, and that the same is true to the best of his knowledge and belief.

WILLIAM O. SCHULTZ

Subscribed and sworn to before me this 28th day of July, 1942.

A. PRATT
Notary Public,
Milwaukee County, Wis.

My commission expires January 9, 1944.

* * * * * * * * * * *

10 Endorsed: Filed Aug 14 1942 Charles E. Stewart, Clerk

Answer to the Complaint.

To the Honorable the Justices of the District Court of the United States for the District of Columbia.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12. Defendant admits the allegations of paragraphs 1 to 12, inclusive.

13. He admits that plaintiff William O. Schultz presented the amendment quoted in paragraph 13, and dated July 14, 1937, for entry in his application No. 727,250, which was filed in the Patent Office on May 24, 1934, and entitled Fuse Construction. He admits that the amendment was accompanied with an oath of plaintiff William

O. Schultz which in form was in compliance with Rule 48 of the Patent Office rules. He denies that the mode of operation set forth in the amendment was either originally shown or described in the application and therefore denies that Rule 48 was applicable to the situation and denies that said oath supported said amendment.

11 14, 15, 16. He admits the allegations of paragraphs 14, 15 and 16.

17. He admits that plaintiff William O. Schultz requested reconsideration by the Board of Appeals of its decision affirming the rejection of claims 46, 48 and 49 of said application, and contended that under Rules 70 and 71 of the Patent Office he had the right to amend the specification by adding thereto the matter quoted in paragraph 13 of the Complaint. He denies, for reasons hereinafter given, that the proposed amendment was in agreement with the original disclosure of said application and denies that such amendment is allowed by Rules 70 and 71 of the Patent Office.

18. He admits that on the petition of plaintiff Schultz for reconsideration the Board of Appeals did not alter its decision holding that the proposed amendment embodied new matter. He denies that the action of the Board was in conflict with Rules 70 or 71 of the Patent Office. He states that the proposed amendment describes a mode of operation which was not disclosed in either the specification or the drawing of plaintiffs' application as filed in the Patent Office. He states that the proposed amendment constitutes new matter in the application and therefore denies that plaintiffs have any right under Rules 70 and 71 to have the proposed amendment entered in their application. He denies that the Board of Appeals did not state or discuss the reason why plaintiffs are not entitled to have the proposed amendment entered.

19. He admits the allegations of paragraph 19.

12 20. He admits that plaintiffs disagree with the decision of the Board of Appeals but denies that plaintiffs are entitled to the allowance of claims 46, 48 and

49 of their application for the reason that the subject-matter of said claims was not disclosed in plaintiffs' application as originally filed in the Patent Office, as will more fully appear from the decisions of the Examiner and the Board of Appeals referred to in paragraphs 12 and 14 of the Complaint; the Statement of the Examiner on plaintiffs' ex parte appeal; and the decision thereon by the Board of Appeals, copies of which will be furnished at the trial.

21. He admits that plaintiffs disagree with the decision of the Board of Appeals. He denies that plaintiffs are entitled to ascribe to the device shown in Figure 4 of the original drawings a mode of operation not originally disclosed in plaintiffs' operation. He denies, for reasons aforesaid, that the disclosure made in Figure 4 is sufficient to support claim 46, 48 and 49 of plaintiffs' application and he denies for reasons aforesaid that plaintiffs are entitled to have the proposed amendment set forth in paragraph 13 of the Complaint entered in and form a part of the specification of plaintiffs' application.

22. He admits the allegations of paragraph 22.

23. He admits that in said application plaintiff William O. Schultz made averments corresponding to the allegations of paragraph 23, but denies, for reasons aforesaid, that such allegations are sufficient to justify the issuance of a patent on said application containing any of claims 46, 48 and 49 thereof.

24. He admits the allegations of paragraph 24.

W. W. COCHRAN
Solicitor, U. S. Patent Office.

August 13, 1942.

13 I hereby certify that a copy of this answer to the complaint was mailed today, August 13, 1942, to the attorney for plaintiffs, Watts T. Estabrook, National Press Building, Washington, D. C.

W. W. COCHRAN
Solicitor.

* * * * * * * * * *

Examination of the drawings and the demonstration of models by Witness McNulty is convincing that spring 15 in Fig. 1, spring 66 in Fig. 4 and spring 90 in Fig. 5 perform an inherent function in the downward movement of the fuse tube and in the ultimate complete release of the latching mechanism. Whether spring 33 in Fig. 1 and its counterparts in the other figures would, unassisted, accomplish the same result is not disclosed by the model demonstrations. The fuse tube ejection, after severance of fuse line 24, is so instantaneous that it is impossible to assess the proportionate influence on the completed process of the forces severally exerted by spring 33, spring 15, and by gravity.

Now, Witness McNulty, as one man skilled in the art, (perhaps exceptionally so) did construct models wherein springs 66 and 90 presumably do expedite in some degree the consummation of the unlatching process. The question for resolution by this Court, however, it seems to me, is whether anyone skilled in the art would from the specifications, taken as a whole, so construct the mechanism, as a matter of course. I am unable to answer the question affirmatively. The application itself describes spring 33 as providing the force that releases the latch. The
16 specifications as to Fig. 5 expressly state that the construction of the latching member is such that the force of the spring urging the fuse tube downwardly is not transmitted to the fuse link and consequently does not strain the fuse link. And in original claim 13 it is stated: "the releasing motion of said latching means being independent" of spring 90 in Fig. 5.

The foregoing considerations make it impossible for this Court to hold that the Patent Office conclusions are inconsistent with the evidence adduced at the hearing of this cause.[1]

---

[1] The opinion of Mr. Justice Jackson handed down on December 7, 1942 in United Carbon Co., et al v. Binney & Smith Company, is of interest.

It follows that the Complaint should be dismissed, and counsel for defendant will submit suggested findings of fact and conclusions of law for determination by the Court.

EDWARD C. EICHER
Chief Justice

December 14, 1942

Copy to Watts T. Estabrook, National Press Building, Washington, D. C.
" " Arthur R. Woolfolk, 1238 First Wisconsin Nat'l. Bk. Bldg., Milwaukee, Wisconsin.
" " Thomas J. MacKavanagh, 633 Munsey Building, Washington, D. C.
" " Chester W. Brown, 4506 W. Keefe Avenue, Milwaukee, Wisconsin.
" " W. W. Cochran, U. S. Patent Office, Washington, D. C.

* * * * * * * * * *

17 Endorsed: Filed Jan 18 1943 Charles E. Stewart, Clerk

Findings of Fact.

1. This is an action under Section 4915 R. S. (U. S. C., title 35, sec. 63) in which plaintiffs seek to have the Court authorize the defendant, the Commissioner of Patents, to issue to them a patent containing claims 46, 48 and 49 of patent application No. 727,250 of plaintiff, William O. Schultz.

2. The application relates to an electric fuse construction. The fuse construction is housed in a casing and includes a fuse link which is designed to blow and break the circuit when an overload occurs. The construction includes a spring which is operative to pull apart the broken ends of the fuse link when the latter blows and thus create a positive gap between the broken ends. The fuse link passes through a fuse tube vertically arranged in the casing

and designed to move downwardly through an opening in the bottom of the casing after the fuse link has blown, to increase said gap. In two species of the construction which are shown in Figs. 4 and 5, a coiled spring is disposed around the fuse tube for urging the fuse tube downwardly. In the third species, shown in Fig. 1,
18 a leaf spring in contact with the upper end of the fuse tube has some effect in urging the tube downwardly. In all of the three species a latch is provided for holding the fuse tube against downward movement until the latch is released. The first mentioned spring, in addition to its function of separating the broken ends of the fuse link, operates at the same time to move the latch to released position to allow the fuse tube thereafter to move downwardly under the influence of gravity and the second mentioned spring.

3. Examination of the drawings (of Schultz application Serial No. 727,250) and the demonstration of models (Plaintiffs' Exhibits 7, 11 and 13) by witness McNulty, is convincing that spring 15 in Fig. 1, spring 66 in Fig. 4, and spring 90 in Fig. 5, perform an inherent function in the downward movement of the fuse tube and presumably to some degree in the ultimate complete release of the latching mechanism.

4. The evidence shows that plaintiffs' expert witness, as one man skilled in the art and perhaps exceptionally so, did construct models wherein the springs coiled about the fuse tube, presumably did expedite to some degree the consummation of the unlatching process, but this evidence is not convincing that anyone skilled in the art would from the application taken as a whole so construct the mechanism as a matter of course. The fuse tube ejection, after severance of fuse link 24, is so instantaneous that it is impossible to assess the proportionate influence on the completed process of the forces severally exerted by spring 33, spring 15, and by gravity.

19 5. Claim 46 at bar contains the following clause:

"means for translating the relative movement between said tube and terminal to produce a positive gap and extend said gap when the fuse link blows."

This clause is not supported by the disclosure made in the application of plaintiff Schultz because, according to said application, the positive gap is produced by the latch-operating spring and not by movement of the fuse tube.

6. Claims 48 and 49 at bar contain the following clauses, respectively:

"means for moving the fuse tube longitudinally relative to said one of said fuse terminals to release said locking means",

"means for releasing said locking means by relative movement between the fuse tube and said one of the ferrules of said tube."

Neither of these clauses is supported by the disclosure made in the application of plaintiff Schultz for in each of the three species disclosed therein, according to this application, the latch is released by a spring operating directly thereon and not by movement of the fuse tube.

7. None of claims 46, 48 and 49 at bar is supported by the disclosure of the application of plaintiff Schultz.

8. None of claims 46, 48 and 49 is patentable to plaintiffs on the basis of the application of plaintiff Schultz.

9. The degree to which the springs 15, 66 and 90 may operate in the ultimate complete release of the latch is so slight as to be inconsequential and since the description
of these springs and the operation thereof set forth in
20 the specification of the Schultz application negatives
the existence of any function thereof in effecting release of the latch, the application considered as a whole is not a disclosure of an apparatus in which the springs have this function.

10. The degree to which springs 15, 66 and 90 operate in the ultimate complete release of the latch is not set forth in the descriptive matter of the Schultz application nor is it affirmatively disclosed in the model demonstrations made at the hearing before this Court that said springs exerted any more than slight influence on the complete release of the latch. Granting, however, that such operation might be held to be inherent in the fuse structures illustrated by Figs. 1, 4 and 5 of the application drawings and in the unquestioned models which were demonstrated by plaintiffs' witness, a man skilled in the art, who testified that these springs must function in order that a final release of the latch may be effected, it is held that to permit plaintiffs to claim a fuse with such operation, as in claims 46, 48 and 49, and to amend the specification to cure the deficiencies would result in new matter being introduced in the application.

Conclusions of Law.

1. Disclosure only in the drawings of an application of an apparatus which may operate in a certain manner, is insufficient to support claims reciting such an operation and this is particularly true where the specification of the application negatives such an operation.

21 2. Plaintiffs are not entitled to a patent on the application of plaintiff Schultz, containing any of claims 46, 48 and 49 thereof.

3. The Complaint should be dismissed.

EDWARD C. EICHER
Chief Justice.

* * * * * * * * * *

22 Endorsed: Filed Jan 18 1943 Charles E. Stewart, Clerk

Judgment.

This action came on to be heard at the last term and thereupon upon consideration thereof, it is this 18th day of January, 1943, Adjudged that the complaint be and it is hereby dismissed, with costs against the plaintiffs.

EDWARD C. EICHER
Chief Justice.

Approved as to Form:
CHARLES F. MERONI
Attorney for Plaintiffs.

* * * * * * * * * *

23 Endorsed: Filed Feb 16 1943 Charles E. Stewart, Clerk

Notice of Appeal

Notice is hereby given that Line Material Company and William O. Schultz, the plaintiffs above named, hereby appeal to the United States Court of Appeals for the District of Columbia from the Judgment entered in this action on January 18, 1943, which dismissed the complaint in this case.

CHARLES W. HILLS JR.
CHARLES F. MERONI
53 West Jackson Boulevard,
Chicago, Illinois.

THOMAS J. MacKAVANAGH
Room, 633, Munsey Building,
Washington, D. C.
Attorneys for Plaintiffs

Dated: Feb 15 1943

* * * * * * * * * *

149 Endorsed: Filed Feb 17 1943 Charles E. Stewart, Clark

Order

Upon application of plaintiffs-appellants, defendant-appellee consenting.

It is hereby ordered that the original exhibits of plaintiffs and defendant filed in this Court and designated by counsel shall be transmitted to the Court of Appeals for the District of Columbia for use on appeal in lieu of copies thereof.

JAMES M. PROCTOR
Justice

Washington, D. C.
February 17, 1943

Submitted:
THOMAS J. MacKAVANAGH
Attorney for Plaintiffs

Consented to:
W. W. COCHRAN
Attorney for Defendant

Washington, D. C.
February 16, 1943

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146 Endorsed: Filed Feb 16 1943 Charles E. Stewart Clerk

Designation of Contents, of Record on Appeal

Now come appellants, Line Material Company and William O. Schultz, by their attorneys, Charles W. Hills, Jr., and Charles F. Meroni, of 53 West Jackson Boulevard, Chicago, Illinois, and Thomas J. MacKavanagh, Suite 633 Munsey Building, Washington, D. C., under and in accordance with the provisions of Rule 75(a) of the Federal Rules of Civil Procedure, and designate the following as the portions of the record, proceedings and evidence to be contained in the record on appeal:

1. Complaint.
2. Answer to the Complaint.
3. Appearance of Thomas J. MacKavanagh on behalf of Plaintiffs.
4. Memorandum Opinion by the District Court, dated December 14, 1942.

5. Findings of Fact and Conclusions of Law entered January 18, 1943.

6. Judgment, dated January 18, 1943.

7. Plaintiffs' exhibits to be transmitted by the Clerk as physical exhibits:

(a) File wrapper Schultz application Serial No. 727,250, Plaintiffs' Exhibit 1.

(b) Colored photograph of Figs. 1, 2 and 3, Plaintiffs' Exhibit 2.

(c) Colored photograph of Figs. 4 and 5, Plaintiff's Exhibit 3.

147 (d) Chart, claim 46, Plaintiff's Exhibit 4.

(e) Chart, claim 48, Plaintiffs' Exhibit 5.

(f) Chart, claim 49, Plaintiffs' Exhibit 6.

(g) Model of Fig. 1, Plaintiff's Exhibit 7.

(h) Photograph, Plaintiffs' Exhibit 7A.

(i) Photograph, Plaintiffs' Exhibit 7B.

(j) Photograph, Plaintiffs' Exhibit 7C.

(k) Photograph, Plaintiffs' Exhibit 7D.

(l) Stand, Plaintiffs' Exhibit 8.

(m) Test Box, Plaintiff's Exhibit 9.

(n) Diagrammatic model, Plaintiffs' Exhibit 10.

(o) Photograph, Plaintiffs' Exhibit 10A.

(p) Model, Plaintiffs' Exhibit 11.

(q) Photograph, Plaintiffs' Exhibit 11A.

(r) Photograph, Plaintiffs' Exhibit 11B.

(s) Photograph, Plaintiffs' Exhibit 11C.

(t) Fuse element, Plaintiffs' Exhibit 12.

(u) Model from Fig. 5, Plaintiffs' Exhibit 13.

(v) Photograph, Plaintiffs' Exhibit 13A.

(w) Photograph, Plaintiffs' Exhibit 13B.

(x) Photograph, Plaintiffs' Exhibit 13C.

(y) Photograph, Plaintiffs' Exhibit 13D.

(z) Model, Plaintiffs' Exhibit 14.

(zz) Photograph, Plaintiffs' Exhibit 14A.

8. Defendant's Exhibit No. 1 to be transmitted by the Clerk as a Physical Exhibit.

9. Notice of Appeal, filed February 16, 1943.

10. Order fixing appeal bond.

11. Appeal bond.

12. All of the evidence and proceedings at the trial which was stenographically reported, the appellants furnishing here two copies of the reporter's transcript of the evidence.

13. A transcript of the docket entries in this action.

148 14. This designation of contents of record on appeal.

CHARLES W. HILLS, Jr.,
CHARLES F. MERONI,
53 West Jackson Boulevard,
Chicago, Illinois.

THOMAS J. MacKAVANAGH,
Munsey Building, Suite 633,
Washington, D. C.,
Attorneys for Plaintiffs.

The foregoing designation of contents of record on appeal is hereby approved, and receipt of a copy thereof is hereby acknowledged, on this 16th day of February, 1943.

Defendant will not object to the above designation of record, and will not file any additional designation of record.

W. W. COCHRAN,
Attorney for Defendant.

II.

TESTIMONY AND PROCEEDINGS AT TRIAL IN THE DISTRICT COURT.

27 Mr. Meroni: If Your Honor Please, this is a law suit brought pursuant to the provisions of Section 4915 of the Revised Statutes. There is only a single issue involved in this case. That issue is whether the applicant, William Schultz, and his assignee, Line Material Company, is entitled to a patent on three claims, 46, 48 and 49. These claims have been formerly rejected in the United States

Patent Office, not in view of any prior patented art but solely on the question of new matter, so that the issue we ask this court to decide at this time is whether these three claims are supported by the original application filed in the United States Patent Office by William Schultz. There is no other issue before this court. I believe I am correct in that.

Mr. Cochran: That is right.

Mr. Meroni: Your Honor, it so happened that these three claims, 46, 48 and 49, were involved in a previous suit before this court. The case I refer to is Line Material vs. Coe, No. 5176, decided by Mr. Justice Bailey on June 6, 1941. I have here for the convenience of the court a copy of the opinion and also a copy of the findings of fact and conclusions of law.

I wish to state that of any papers I refer to, I will furnish Counsel for the Commissioner with copies.

In that case, Your Honor, the question came up as to whether these claims were supported by this application.

28 The Court: These same three claims were involved in litigation before Judge Bailey?

Mr. Meroni: That is right, Your Honor, but Judge Bailey said, in effect, that issue was not before him because this application was not before him, and here is his finding of fact on that. These claims correspond to Claims 10, 11 and 12 of that case, and Judge Bailey said, in his conclusion of law No. 5: "The question of whether or not the parent application"—that is the application here involved—"supports any of the claims involved in this suit is not relevant in this proceeding and such question is therefore not decided. Since the question of whether or not the current application supports the claims involved in this suit is not decided, all evidence offered on that question is held to be incompetent in this action which involves the present application only."

In other words, Your Honor, in that case the application that was involved was a continuing application or a different application from the present one. The present one is the parent application and it wasn't before Judge Bailey, and he properly held that he could not rule on the question of whether these three claims were supported by that parent application since it was not before him.

Hence, we have the present proceeding in order to obtain a ruling from this Court as to whether these three claims are supported by the disclosure of this parent appli-
29 tion, Serial No. 727,250, filed May 24, 1934, by William O. Schultz, one of the plaintiffs, and assigned to Line Material Company, one of the plaintiffs.

The Court: Do you make the claim, Mr. Cochran, of raising new matter?

Mr. Cochran: No, Your Honor.

Mr. Meroni: For the convenience of the Court, I hand up copies of Judge Bailey's findings, and also copies of three decisions that I will rely upon in support of my position in this case. I have furnished Mr. Cochran with copies.

I would also like to hand up for the benefit of the Court enlarged copies of Claims 46, 48 and 49 which are involved in this suit. They are the only claims that are involved.

The Court: This is exactly as they appear in the application?

Mr. Meroni: Yes, Your Honor, except that we have broken them down into their essential elements as we view it.

Your Honor, I also have photostatic or photographic reproductions of the drawings in this Schultz application, Serial No. 727,250, which we have colored for the purpose of facilitating our explanations to the Court. We have large charts which we will refer to later and these smaller charts are identical replicas, and I would like to hand these
30 up to the Court.

As I have said before, Your Honor, there is no question about the patentability of these claims. The only issue is whether they are supported by this disclosure in those drawings and in the accompanying specification. The Examiner has said, in effect, that in order for us to find support for these claims in the application, we must introduce new matter, so that the question that is before this Court is whether, in order to find support for these claims in that application, we have to resort to new matter. Our position is that we do not.

I would like now very briefly to refer to the nature of the subject matter that is in controversy. I have here an enlarged chart, Your Honor, which is colored and which corresponds to the small replica which you have. It is an exact reproduction of Sheet 1 of the Patent Office drawings of this application, with the exception that the essential parts have been colored.

The invention in controversy relates to a fuse tube. The invention is a mechanical invention. While the mechanical structure is adapted for use in a high-powered electrical circuit used for the transmission of power, the distribution of power, we are not concerned with the electrical aspects in this case. We are concerned solely with a mechanical structure.

31 We have here in Fig. 1, one form of the invention. There are three species or three forms shown in this application, Fig. 1, Fig. 4 and Fig. 5. It is our position that all three claims find complete response in all three species of this application. In the first form of the invention shown in Fig. 1, we have here a box which may be made of any suitable material, such, for example, as porcelain. Positioned in that box is a pair of electrical terminals, 7 and 8. The electrical power lines are attached to these two terminals, one being shown in gray (that is 7) and the other being shown in tan at 8. That is where your power leads are connected to this box.

Extending from these respective terminals are contacts 12 and 9.

Now, the structure that we are concerned with in this controversy is a fuse tube or a fuse, if I may put it that way, for electrically connecting those two terminals. In the invention shown in Fig. 1, the fuse is illustrated as

embodying a fuse tube 11 shown in yellow. That fuse tube
is made of any suitable insulating material, for example
fiber. It has integral with it a narrow terminal referred
to in some of the claims as a ferrule, 14, and a terminal 10
which is shown in blue and is in the form of a sleeve. That
sleeve is attached to the door of this box which is desig-
nated by the reference character 2. The door is hinged at
3. It may be made of any suitable material, such,
32 for example, as porcelain, and has a handle or a hook,
4, by means of which the operator may open that
door to have access to that fuse when it is desired to re-
place it.

Extending inside of this fuse tube 11 is what is commonly termed a fuse link. The fuse link is not shown as extending the whole length of the tube because the tube is in elevation, but you will notice the lower extremity of the link at the bottom of the tube is shown in green and it is numbered 24. That link, as we will show later on, is inserted from the top and has a small button that holds it up here, and extends down through the tube and then comes around and is anchored to a locking mechanism.

It is with regard to that locking mechanism, Your Honor, that a large phase of this controversy is concerned.

Pivotally connected to this blue sleeve 10, which is a terminal for the fuse tube, is a lever, 29, shown in dark brown. That lever carries a terminal button or nut, 34, which anchors the end of the green fuse link 24 thereto. That lever, as you will note from Fig. 3, has two arms: that is, it is a bifurcated construction; there is an arm on each side of the fuse tube. Both arms, however, are identical and they are pivotally mounted on a common pin, 32, shown in Fig. 3.

Also mounted on that pin, Your Honor, is a spring which
we may in the future discussion of this case refer to as a
small spring. It is shown in a light pink and is
33 designated by the reference character 33 in Fig. 1.
The purpose of that spring, Your Honor, is to tend

to urge this lever 29 in a clockwise direction. In other words, it at all times tends to urge that arm in that direction when the arm is in the position shown in Fig. 1.

Also attached to that lever, and an integral component of it, is a latching arm, 28.

The Court: Would you call it a locking arm?

Mr. Meroni: Yes, Your Honor, it is a locking arm. It is one element of a lock. In other words, in every lock or latch you have two elements. You have to have a catch and you have to have something for it to catch on. Well, this locking arm or latch cooperates with this pin or roller, 27, which is the other element of the latch, and that is attached to and movable with the fuse tube 11. It is attached to the fuse tube by means of the collar 26. That is made of metal. The fuse tube proper is made of fiber.

This locking arm is movable in a clockwise direction underneath this pin or roller 27 during the unlocking operation. In other words, as we view it in Fig. 1, it moves to the left during the unlocking operation. It is normally restrained from such movement by reason of the fact that the lower end of the fuse link shown in green and designated by numeral 24 is firmly anchored to the lower extremity of this arm 29, so that the link is the means
34 for holding that arm assembly in the position shown in Fig. 1. It follows that upon blowing of the fuse link due to an overload condition—and that overload may be of great moment, such as a major short circuit, or it may be just a minor overload—this lever will rotate in a clockwise direction under the roller 22 and toward an unlatched position for the lever.

If Your Honor will look at the upper part of Fig. 1, you will perceive that there is a spring 15 shown in red which cooperates with the contact 13 and exerts a downward spring pressure on the tube. When the tube is inserted in the box, the door is moved from an open position to a shut one, and as it moves to a shut one, the fuse is jammed up against the contact 13 and the hook 5 latches the door to the box. That results in the positioning of the tube as shown in Fig. 1 and also results, Your Honor, in the tube's being subjected to the spring pressure of this spring 15 for forcing the tube downward.

One of the major points of this controversy is whether the spring 15 or the little spring 33 separately or selectively effect unlocking of the lever. That is one of the issues we have here. In other words, we are concerned with the spring forces that are utilized in this construction for effecting an unlocking or unlatching of the locking arrangement. It is our position, Your Honor, as we shall prove by competent evidence and by models—this evidence not having been before the Patent Office—that the spring 15 in this form of the invention, and a similar spring in the other forms, only in the form of a coil spring, is a very important factor in the final release of the tube and in the movement of the tube to the dotted line position in Fig. 1. It is our position, Your Honor, that while the little spring on the pivot pin 32, namely the spring shown in pink, tends to move the lever 29 in a clockwise direction, when the end of the lever reaches a certain position underneath the pin 27, as we will show, the spring pressure of the spring 15 is then freed to effect the unlocking of the tube. In other words, it moves the tube downwardly forcibly and also moves with it the pin 27 and forcibly ejects the tube. We will demonstrate that.

I have here, Your Honor, a model which I will later identify, but which I will temporarily refer to as a diagrammatic model corresponding to Fig. 1. So that there will be no misunderstanding, I am not going to offer this model or refer to it as being a replica in any sense of Fig. 1. I am merely referring to this model as representing the principle that I am going to talk about in my statement.

We have here a wooden rod which roughly corresponds to the fuse tube 11. We had to provide a guide for it, which we did at the upper extremity. We also have here a lever which we say corresponds in principle to the lock-

ing lever that you see in Fig. 1. We also have the
36 other element of the lock, namely, the pin, mounted
on the fuse tube, and that corresponds to the pin 27.

Now Your Honor, instead of putting the spring up at the top of this assembly, which would mean a very tall arrangement, we have put the spring at the bottom, but you will appreciate that that spring still exerts a downward force, and by locating it at the bottom we have been able to utilize the space where the lower end of the tube goes to house the spring and thus have a more compact arrangement.

I will pull this tube upwardly and lock the lever to the pin. Now we have the two elements of the lock, the lever and the pin. Without either of them, the lock wouldn't work. In so doing, we have compressed this spring that motivates the tube or the rod, so that the energy of that spring is now being transmitted directly to this roller and we can demonstrate that by showing that it is holding firmly.

We have not mounted a little spring on this axis spring for this lever which would correspond to the spring 33, but for the purpose of this illustration, we put a handle there which we will manipulate manually to imitate the action of that spring.

The Court: Your spring in the box below you claim has the same effect as spring No. 15?

Mr. Meroni: That is right, Your Honor, and in other
forms you will find that there is a coil spring in here,
37 in this sleeve 10, instead of at the top, which has
the same effect. In other words, in all forms there
is a spring for forcing the tube down.

Now Your Honor, it is our position that as that spring turns around here, you ultimately get to a point where the extremity of this lever will pass the line joining the center of this pivot pin and the center of this roller. There is a direct line between those centers, and the moment that that extremity passes underneath that side of this locking roller, this spring then becomes effective to throw that lever out of the way and forcibly eject the tube. So our position is that this spring is a factor in the release of that lever and that it is not merely the function of the spring that is on this little shaft. That is the issue that is before you.

I will slowly move that. (Demonstrating the ejection of the fuse tube)

So I say, Your Honor, that that spring there is so interrelated with the action of that lever that it is of great moment in effecting a final unlocking of the tube. It is the means for unlocking that tube. The other spring is merely a means for withdrawing the arm toward an unlatching position.

I am not going to take the time, Your Honor, to demonstrate these other models because we are going to do that with our experts, but I wanted to take sufficient time to show you the principle that we are endeavoring to
38 establish by our proofs, and that principle is common to all forms.

Your Honor, I would also like to call your attention to the fact that we have a very large file, that this application was filed some eight years ago, that it was involved in many interferences, but that it isn't necessary for this Court to go into any of those matters because we are not concerned with that here. The only issue that we are concerned with is whether or not the application as originally filed, which application you will find in the fore part of the file wrapper, supports the claim. That is the only issue we are asking adjudication on.

The Court: Did I understand you to say that your contention is that the Commissioner of Patents does not contend that is not a novelty or is not patentable, but merely that your application is not supported?

Mr. Meroni: That is my understanding of it. I believe that is Mr. Cochran's understanding, too.

There is one other point I would like to call to your attention, Your Honor. We have here a photostatic reproduction of the second sheet of the drawings which illustrates the other two forms, which we refer to as a Fig. 4 and Fig. 5 form. They are variations of the same principle. You have a small replica of that chart before you and it is colored to correspond to this one.

You will note that instead of having a spring at
39 the top in these modifications, the spring is inside
of the sleeve-like terminal at the lower end of the
tube. That spring serves identically the same function as the spring at the top. It is a spring for forcing the fuse tube downward, and that spring is shown in red.

The Court: Figures 4 and 5 are just like the model?

Mr. Meroni: That is right. We have a little different arrangement of the latching mechanism but the principle is still the same in all of these.

In the Patent Office, the Examiner ruled that no one of these figures supported these claims. He made a sweeping ruling to that effect, and in his statement before the Board he discussed that. The Board of Appeals, and I believe counsel to a large extent, confined their discussion to Fig. 4, principally, because in that figure it so happens that there is illustrated a lever which has an eccentric arm. This lever, the arm for the roller engaging surface in Fig. 1, is concentric to the axis of the pin. In Fig. 4 it is eccentric, and as a consequence, the spring force of the spring can assist the little spring; that is, the spring force of the tube-moving spring shown in red can assist the pink spring in moving this lever toward an unlocking position. The attorney in the Patent Office endeavored to amend the specification to describe that that was an eccentric cam. There is no ques-
tion but that it is illustrated, they don't deny that,
40 but the Patent Office has ruled that even though we
have shown it, we can't at this time amend our disclosure to say that what we have shown is an eccentric cam, and that is all that amendment involves as referred to in the bill of complaint here.

Our position is that all three forms support these counts or claims and that we will show by competent evidence and by actual models built to conform with these three species that the structure of the three claims is inherent in the structure as illustrated.

I have in my law or authorities which I have referred to, and on which I have given the Court three decisions, pointed out what the test is in that regard, and I don't think it is necessary for me in the opening statement to point out the applicability of this. I would just like to point out that in the course of my case, I will endeavor to meet that test and to show that the features of the claims here before this Court are all inherent in the three species disclosed in this application.

That concludes my opening statement. Thank you, Your Honor.

Mr. Cochran: If it please Your Honor, Mr. Meroni correctly states that the only issue here is whether the Schultz application as filed in the Patent Office will support these three claims. These three claims, I may say, Your Honor, are now to be found in a patent granted to another party.

41 The Court: On an application that was filed before this one?

Mr. Meroni: No, it was not filed before this one, Your Honor. We were senior party in that interference, but it was held that we couldn't make these three claims.

Mr. Cochran: So that the question of the patentability of these claims over prior patents is not here in issue.

Mr. Meroni has stated that all three of the species shown in the original drawings of the Schultz application are relied upon to show that Schultz was entitled to make these claims; that is to say, that all three of these species will support the claims. The diagrammatic model, as I believe Mr. Meroni called it, which he has exhibited to Your Honor, may be made in accordance with the showing of Fig. 1; that is, so far as the main operation is concerned. In his statement, Mr. Meroni indicated that the extreme end of the lever would be operated upon by the spring pressure

when the stud or roller 27 finally reached that edge, and that when it did reach that edge, the spring would be freed to act to complete a releasing action. I have read over this case and so far as I have been able to ascertain, that is an entirely new thought, now for the first time presented. So far as I know, it was not hinted at in the application or any of the previous arguments, and since it was not hinted at in the application, it is not a thing which was disclosed in
the application. It appears to me to be an after-
42 thought, and so far as I know from my reading of
the case, heretofore the plaintiff has never relied
upon any figure or any species of the drawing except Fig. 4 as being sufficient to support the three claims here in issue, and the portion of Fig. 4 relied upon by the plaintiff was the cam-shaped locking lever 61.

It is fundamental, Your Honor, that an applicant is not entitled to allowance of a claim unless the subject matter thereof was shown and described in his application as filed. If that were not the case, then any sort of new matter could be added to an application after it was filed. The position of the Patent Office Examiner and the Board of Appeals is that the operation which is set forth in these three claims is not only not shown in the application as filed, and not disclosed, but is contrary to what was disclosed there. The operation described in these claims is different and contrary to the description of the operation contained in the patent application.

In Claim 46, for example, Your Honor, the statement is made that there is means for translating the relative movement between the tube and the terminal (the tube is the yellow and the terminal is the blue matter in Fig. 4), and between said tube and terminal to produce a relative gap. That is a statement which is none too clear but it refers
to the means of translating that movement, bringing
43 it about so that the movement produces a positive
gap, and that means comprises the lever of the locking-arm lever, the latching lever, pivoted to a relatively

movable terminal; in other words, that the movement of that lever brings about the gap. Now the position of the Patent Office is that the movement of the lever does not do that; that the movement of the lever merely gets the lever out of the way so that the spring can close the gap for them.

Similar expressions are found in the other claims: "Means for moving the fuse tube longitudinally relative to one of said fuse terminals to release the locking means." The position of the Patent Office is that it is not the movement of the tube which releases the locking means. It is the release of the locking means which permits the movement of the tube and that the locking means must be released before the tube can move.

Claim 49 has similar language in it. I think it will appear, Your Honor, as the evidence is produced, that plaintiffs' apparatus as illustrated in the Schultz application, and as described in there, does not operate in this manner.

The Court: Very well, proceed with your evidence.

Mr. Meroni: I would like to call Mr. McNulty as your witness, Your Honor, and at this time I might state that Mr. McNulty is the only witness we plan to call.

Peter C. McNulty, called as a witness in behalf of the Plaintiffs, being duly sworn, testified as follows:

44 Direct Examination

By Mr. Meroni

Q. 1. Will you please state your name? A. Peter C. McNulty.

Q. 2. Where do you reside? A. Milwaukee, Wisconsin.

Q. 3. Please state briefly your training and qualifications as a patent and mechanical expert. A. I graduated from the four-year course in engineering at the Vanderbilt University, Nashville, Tennessee, in 1903, the course being a mechanical course and partially an electrical course. From 1903 until 1905, the middle of 1905, I was with the

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pennsylvania, in their drawing room, working on reversers for street railway apparatus.

From 1905 to 1910 I was the engineer of the Borough of Edgewood, doing consulting work on the outside partially in electrical engineering as well as civil engineering.

From 1910 to 1920, I was Vice President of the company controlled by the Westinghouse Airbrake Company for manufacturing and selling air-driven domestic water systems and private electric lighting plants. My duties involved the mechanical matters in connection with the design, manufacture, installation and operation of the apparatus.

From 1920 to '22, I was Vice President in charge of
manufacture and sales of the Seamweld Equipment
45 Company, Milwaukee, Wisconsin, manufacturing
alternating current electric welding appartus.

During the period of 1912 to 1920, among my duties was the making of models and charts and testifying as a mechanical expert in patent matters in connection with the company I was associated with. From 1923 to date, I have continued this work of making of models and charts illustrating structures involved in patent litigation and have testified many times in the Federal District Courts as a mechanical expert in patent litigation.

Q. 4. How old are you, Mr. McNulty? A. Sixty-one.

Q. 5. Mr. McNulty, have you studied the Schultz application Serial No. 727,250 involved in this controversy? A. I have studied the application as originally filed and understand it.

Q. 6. Have you studied the mechanical elements of the three claims 46, 48 and 49 that are here in issue? A. Yes, I have.

Mr. Meroni: At this time, I would like to interrupt the examination of this witness for a moment to offer in evidence on behalf of the plaintiff the file history of this Schultz application, Serial No. 727,250. It is a certified copy. I offer it in evidence as Plaintiff's Exhibit No. 1.

46 Mr. Cochran: I have no objection.

The Court: It may be admitted.

(The certified copy of the file history of the Schultz application, Serial No. 727,250, was received in evidence and marked "Plaintiff's Exhibit No. 1.")

Q. 7. Mr. McNulty, I have here what purport to be two large charts, replicas of which I have already furnished the Court and Counsel for the Commissioner of Patents. I ask you to state if you can identify these charts and what, if anything, you had to do with them.

Mr. Meroni: I would like to have the court reporter mark these for purposes of identification as Plaintiff's Exhibits 2 and 3.

(The chart showing Figures 1, 2 and 3, and the chart showing Figures 4 and 5, were marked "Plaintiff's Exhibits No. 2 and 3 for Identification" respectively.)

A. Plaintiff's Exhibit 2 is an enlargement of the sheet of the drawing of application 727,250, containing Figures 1, 2 and 3. I have applied the colors to the various parts of the structures which I will explain later. I put at the top of the drawing the name, William O. Schultz, Application Series No. 727,250, filed May 24, 1934, as an additional identification of the figures.

Plaintiff's Exhibit No. 3 is a similar enlargement of Figures 4 and 5 of the same application, to which I have applied similar colors to the parts there shown. 47

Q. 8. Referring now, Mr. McNulty, to Plaintiff's Exhibit 2, I ask you if you have studied the structure shown in that exhibit and also the descriptive matter in the application pertaining thereto. A. Yes, I have.

Q. 9. Will you please explain to the Court your understanding of the mechanical structure and its operation there illustrated? A. Figures 1, 2 and 3 on this sheet show three views of the same structure, Fig. 1 being a vertical sectional view through the housing showing the fuse parts within; Fig. 2 being a plan view taken at the point 2 - 2 in Fig. 1 looking upwardly; Fig. 3 being an elevation view of the portion of Fig. 1 taken along the line 3 - 3 of Fig. 1 and looking in the direction of the arrows there shown.

In this disclosure, the sectioned parts which are partially broken away in section and designated by the number 1, illustrate what is termed the housing. The heavier sectioned parts to the right, marked with the Fig. 2, illustrate a door which is pivoted at the point 3 to the housing and which is spring latched to the housing at the point marked 5.

In this type of fuse housing is mounted a fuse structure. The housing has a terminal 7 to which I have applied a gray color; a spaced terminal 8 to which I have applied
48 a tan color. These terminals are connected by
means of members 9 to which I have applied a tan color, to a contact member on the fuse tube which I will refer to later.

The terminal 7 is connected through member 12 to which I have applied a red color for part of the way to illustrate the fact that the specification refers to it as a springlike member, and the remainder of the way I have applied to the portion marked 13 a darker gray color which is the part that actually contacts the fuse cartridge upper terminal.

The fuse portion itself is made up of a number of parts which I will refer to in order and explain the colors applied to them. 11 illustrates what is termed the fuse tube. I have applied a yellow color to it and you will see that it extends downwardly from the member 14 which is its upper terminal member, and I applied a yellow color to that, but a dark blue color to the upper portion that contacts with the member 13. This yellow color continues down clear to the end of the tube.

In the drawing the lower end of the tube has been broken away and sectioned and it contains a fuse link member 24, a portion of which is shown at the lower end, and I have colored it with a green color.

In order to illustrate to Your Honor what is inside of that tube, I have here a fuse link. Many types of fuse links
are available that could be put into such a fuse. This
49 one has a head member with a washer which is
clamped between the upper end of the tube member
11 and the upper terminal member 14. Just below the washer member is a fusible portion, which is the fuse wire that melts on light overloads in the circuit. Attached to the fusible portion is the flexible member. It extends downwardly through the entire length of the tube and the green portion in Fig. 1 illustrates the lower end of it coming out of the tube. It extends through a notch, 25, shown at the bottom of the tube.

The tube portion itself has, in addition to this upper contact member 14 that I have referred to, another contact unit to which I have applied the blue color and a brown color. This unit is fastened to the door 2 by means of a latch marked 18, contacting a metal piece 20 and a spring 21 which contacts a portion 22 on the blue part. I put a little darker blue color on this part 22 to illustrate how this spring 21 contacts it.

Pivoted to this blue contact member 10 is a member 29 to which I applied a brown color, which the specification refers to on page 5 as a latch and contact member. The brown portion of this part 29 illustrates the contact member part of it, for you see that the current flows through the green portion of the fuse link which is clamped to the member 29 by means of the nut 34; and then by means of an
electrical connection 35, the current goes from the
50 member 29 as I am illustrating with my pointer to
the dotted portions and up to the blue member 10.

This pivoted member 29 is referred to as a contact member also in addition to the member 10, because the entire unit of the blue parts and the brown parts actually are terminal contact members of the fuse tube and carry current; but made integral with this part 29 is a pair of arms 28 to which I have applied a darker brown, sometimes referred to as a sepia color, and that portion is the part that the specification refers to as a hook-like arm 28 of a latch and contact member 29, this portion 28 being a portion of the latching or locking portions of the fuse structure.

Secured to the yellow tube member 11 is a collar, 26, which I have also colored yellow, and on the collar 26 is a pair of pins with rollers on them, 27. This I have colored an orange color.

A hidden spring in Fig. 1 is shown by dotted lines as wound around the pivot pin 32, this pin 32 being mounted on arms of the lower contact blue member 10. It is better shown in Fig. 3 where you look straight at the spring portions. I have applied a pink color to this. This spring is formed at its ends like a hairpin and wound around the pin 32, one end of the spring pressing against the blue part 10, the other end of the spring pressing against the brown contact member 29.

Mr. Meroni: Mr. McNulty, may I interrupt your
51 statement? Your Honor, it was my thought that we
might expedite this a little and at the same time facilitate the explanation by referring to an actual model, and I would like at this time to ask the witness a question in that regard.

Q. 10. Mr. McNulty, I have asked you to have made under your supervision a model conforming to the showing in Fig. 1. Have you had such a model constructed? A. I have had a model made under my supervision and I produce such model.

Mr. Meroni: At this time, I would like, in order to have my exhibits in order, to have the court reporter mark these three claim charts showing Claims 46, 48 and 49, of which I have given the Court and Counsel for the Commissioner copies, as Plaintiff's Exhibits 4, 5 and 6, this marking being solely for identification at this time.

(Copies of charts showing Claims 46, 48 and 49 were marked "Plaintiff's Exhibits No. 4, 5 and 6 for Identification," respectively.)

Mr. Meroni: Now I would like to ask the court reporter to mark for identification this model of Fig. 1 which has been produced by the witness, as Plaintiff's Exhibit No. 7.

(The model of Fig. 1 was marked "Plaintiff's Exhibit No. 7 for Identification.")

52 Mr. Meroni: I also have here a stand which I would like to have marked for purposes of identification as Plaintiff's Exhibit No. 8.

The stand used for mounting purposes in the following demonstrations was marked "Plaintiff's Exhibit No. 8 for Identification.")

Q. 11. Mr. McNulty, do you know anything about this stand that I have in my hand? A. It was made under my direction, Mr. Meroni, for mounting the model.

Q. 12. Will you now proceed with your explanation of this mechanical structure shown in Figures 1, 2 and 3, which I understand is represented by this model? Before doing that, I would like to ask you this: How does that model conform to Fig. 1? A. This model has been made in conformance with Fig. 1 of Application 727,250.

Q. 13. You are now referring to Plaintiff's Exhibit 7? A. I am referring to Plaintiff's Exhibit 7, in which the outside diameter of the tube 11 is one inch. The remainder of the parts of the model are in correct proportion to the one inch diameter of the outside tube.

The model has been made under my direction and is a faithful physical illustration of the parts shown in Fig. 1 of the patent. I have, for the purpose of observa-
53 tion, cut away the sides of the housing where I am
pointing with my finger so that the parts within the housing can be seen. I have added one thing to the model for the purpose of illustration, this being a pin which is movable in the wall of the housing for the purpose of contacting the rear portion of the lower brown contact lever member 29 to stop its movement at a position where the latching member 28 has not finally passed out from under the latching pin.

Q. 14. Will you show that pin to the Court, please? A. This is the member I am referring to. When it is moved in, the lower contact lever member that I am pointing to will abut it when it is moved outwardly, and when it is moved away it dosn't interfere in any way with the operation of the device.

Q. 15. What is the bracket on the back of that box? A. The bracket on the back of the box illustrates a form of member for mounting the model in position when it is in service, such as the unnumbered part that I am pointing to at the upper left-hand side of Fig. 1.

Q. 16. You have had that shaped so that we could use this stand (and by stand, I mean Plaintiff's Exhibit 8)? A. I have, yes.

Q. 17. Will you now mount that model on that stand and proceed with your description of the model and its operation? A. I have now mounted Exhibit 7 in a vertical position on the stand, Exhibit 8, and it contains in it a fuse link such as the member that I produced. Do you care to give that a mark?

54

Q. 18. That is a standard fuse link on the market? A. Yes, it is marked, L. M. CO. N 5A.

Q. 19. I don't think there is any necessity for separately offering it. However, I would like to submit it to Mr. Cochran. Proceed with your testimony. A. I will first connect this into the electric circuit and blow a link to illustrate the action of the fuse. When the current comes on it normally carries at a rated load from one of the terminal members of the housing to another terminal member of the housing and the fuse may not be called upon to do anything other than establish that circuit as long as conditions are normal. When conditions in the circuit become abnormal, the fuse is called upon to open the circuit and to protect the apparatus which is being supplied through that circuit. The overload may be merely a small, continuous overload which is sufficient to cause the meltable portion of the fuse to melt and let the parts be free to separate without the production of enormous volumes of gas; or it may be the type which is known as a short circuit in which a very heavy load is suddenly thrown upon the fuse, in which a larger volume of gas will be generated.

Q. 20. Mr. McNulty, in order to assist in the making of this demonstration, have you had a test box made? A. I have had a box made in which the current will be held down by a resistor on the inside so that there should be only about 10 amperes go through the circuit.

Q. 21. What is the capacity of the link that you now have mounted in this model, Plaintiff's Exhibit 7? A. It is one of these same links that I have in my hand which is marked 5A, which means 5 amperes.

Q. 22. Will you please proceed to use this test box and make a demonstration to the Court showing what happens when a current is applied to this exhibit, Plaintiff's Exhibit 7, through the means of this test box which you say will deliver 10 amps? A. When the button on this box is pushed downward, a current will be put through the fuse link in the tube that is greater than the link is designed to handle, and after a few moments the meltable portion will melt and the brown member 29 will be rotated in a clockwise direction and at some point in its travel, the spring member 15 and such spring portion of 12 as is acting, plus gravity, will act to help finally release the tube member so that it can drop down.

I didn't tell Your Honor that on Exhibit 2 is a dotted portion which illustrates where the fuse tube is going to go after it has blown. This is what is referred to as a drop-out type of fuse and is known as an expulsion type of fuse, the upper end of the fuse tube being closed and the lower end open, so that gases generated in the tube are expelled from the lower end of the tube. This general type of fuse tube is called an expulsion type of fuse, but this one is called a drop-out type for the reason that the tube itself is going to slide downwardly like that. I will refer to that a little later.

If we press the button on the box, the current going through the tube melts. (Demonstrating) What happened was that as the fuse link no longer restrained the member 24, it moved clockwise, as the specification says, and the latching arm, which is 28, also moved clockwise with that lever. I will illustrate by removing the part which was burned and partially put out of the housing.

Q. 23. You are now in the process of resetting the locking mechanism, are you not? A. I am. I have reset the locking mechanism and held by my finger the rocking contact member in the position that the fuse link held it in, and the specification explains that the fuse tube is biased to downward and outward movement.

Q. 24. What is the thing that biases the tube in that manner? A. In this model, the upper spring members that I am referring to, which in the drawing are 15 and 12, are pressing downwardly on the top of the tube and pressing through the latching roller 27 onto the latching arm 28.

57 Q. 25. Can you demonstrate to the Court by closing that door slowly the manner in which that spring is deflected? A. I can, Mr. Meroni. I have now opened the door, and Your Honor will see as I move in that the members 12, 13 and 15 move upwardly, which gives the force for downwardly biasing the tube to downward and outward movement.

Q. 26. Will you now refer to the portion of the specification that you said describes that biasing action, Mr. McNulty? A. On page 2 of the specification, beginning with line 11 of the "Objects," the specification says, "In greater detail objects of this invention are to provide a housed type of expulsion fuse in which the fuse tube"—that is this portion I am pointing to—"is biased toward motion axially of the fuse tube"—of course the axis of the tube here is vertical—"and downwardly and outwardly from the housing and is normally restrained from such motion by the fuse link." I am doing it in this model now by my thumb, you see.

The Court: The fuse link restrains the motion that would otherwise be made effective by the spring above?

A. That is correct, Your Honor. The upper spring 15 is always pressing against this latching lever member 28 through the roller 27 and inasmuch as this inner surface 28 is circular almost to the end of it, there is no tube movement during the first part. I have now pushed in this
58 little pin member that I referred to, to the point
where I can let the lever 29 stop adjacent to end of the travel, but when the end of the lever passes over a line between the center of the pin 32 and the roller 27, the contact springs 15 and 12 begin to exert their effort for a downward movement of the tube.

In this model a vertical movement equal to the amount that you saw me compress springs 12 and 13 caused the contact terminal 14 to move away from it. The power stored up by those springs is an energy for downward movement of the tube that assist gravity to finish it up. As we come to some other models, you will find that the coil spring around the tube acts on the downward movement for a greater distance than in the model of Fig. 1.

Q. 27. Mr. McNulty, would you point out in this chart, Plaintiff's Exhibit 2, the line that you refer to in your description of that model? Can you do that with a card? A. I have placed a card across the center of the pin 32 and the center of the roller 27 in Fig. 1 to illustrate that after the arm 28 passes that line, the forces of gravity and the spring forces of 15 and 12 act in unison with the spring 33 to insure the complete releasing of the arm 28.

In the model as I now have it, if I pull out this member that I have put in and let the arm 28 continue its motion, you get the joint action where the final releasing is the joint
effort of the spring 33, the springs 15 and 12, and
59 the forces of gravity. That is, it is inherent in the
disclosure of the drawings and specifications that the forces combine at that moment of final release.

Now, the specification doesn't say anything about the length of time that these devices operate in the field, but it may be years before a device of this character is called upon to perform its work, and when called upon to so perform, it should work successfully. These flexible leaders may have more resistance to movement after weathering than they do at the start, but the final insurance of a releasing so that the tube may move is under the combined forces of the spring 33, springs 15 and 12, and the weight of the parts in Fig. 1.

What happens when that movement starts is this. Your Honor saw that when I removed this burned portion or the lower portion of the fuse link, the fusible portion which had been burned, from the model, Exhibit 7, the lower portion had not entirely been blown or drawn out of the tube, but sometimes on heavier currents the expulsion effect of the gases would be such that that might be blown clear out, and even in severe overloads it might be completely burned. Within that tube, the gases in there are able to carry current electrically after they have caused this arc to occur, and the successful performance of the device is when those gases are extinguished without causing an arc to
60 form from the upper members 15 and 12 clear down
through the tube and around to the lower member 9. When such a thing as that happens, the operation is then a failure and something else in the circuit has to clear that circuit; some other device such as a circuit breaker behind this fuse has to clear that circuit, and it, in clearing, may throw out a number of these fuses out of the circuit entirely. The purpose of this device is to protect the particular circuit that it is in, so that when the lever 29 starts its motion in the direction of the arrow shown on Plaintiff's Exhibit 2, it begins to draw the upper end of the fuse link downward in the tube, which tends to increase the gap caused by melting of the fusible portion.

You will notice that the member 29, as I am illustrating it here in the model, Exhibit 7, is movable during that portion relative to the tube itself. I have again put the arm 28 underneath the rollers 27 and am going to illustrate with my fingers how, as the patent calls it, the lower rocking contact member is movable with reference to the tube.

There is a second type of motion that the tube has with reference to the remainder of the lower contact member; after the lever passes out of engagement, you see there is a relative movement between the tube and the blue portion of the lower contact member, so here we have two portions of the lower contact member that are relatively movable to the
tube, the brown one making an initial gap greater in-
61 side of the tube, but as soon as that final releasing
occurs, the relative movement between the tube and the blue member makes an additional gap between the member 13 and the member 14 as I am illustrating by the downward movement of the tube.

So that in this Fig. 1 device, we have the tube restrained by the fuse link itself against any movement until an overload current ruptures the link; then we have a gap formed within the tube initially by the movement of the member 29 under the pink spring 33, and then a joint movement at the end of its travel by gravity and the forces in the springs 12 and 15 to increase that gap and make another gap at the top. Your Honor will readily understand that this member which has burned up in the tube is securely fastened at its lower end to this rotating lower contact member, so that as the tube itself moves downward, more of the link comes out of the tube.

The electrical path in the position in which the model, Exhibit 7, now is, starts from the upper contact and would have to go through the air to the contact 14, which is the dotted position in Fig. 1, clear down through the tube and out to any portion of this link which might be dangling or which might still be in, as we saw when we blew this fuse, and up to this lower contact member, and the object or the result of this motion is an ever-increasing gap outside and inside of this tube to try to prevent what we call a

62 flashover. In what we usually term the stationary type expulsion fuses, sometimes this light overload current would do just what has happened in this one, break this small fusible wire and the wire would fall over against the side of the tube and there, if arcing continued, it would injure the tube wall itself.

(Ten-minute recess.)

Mr. Meroni: Before we proceed with the witness' examination and testimony, I would like to mark for purposes of identification this test box which the witness has used in his demonstration, and which he said he had constructed under his supervision.

(The test box was marked "Plaintiff's Exhibit No. 9 for Identification.")

Mr. Meroni: I would also like to have the court reporter mark this model which I have referred to in my opening statement, which I called a diagrammatic model, as Plaintiff's Exhibit No. 10.

(The model was marked "Plaintiff's Exhibit No. 10 for Identification.")

Q. 28. Mr. McNulty, I hand you what purports to be a wooden model and ask you if you have seen it before, and if so, to identify it and state the circumstances under which it came to your attention. A. I had this model,
63 Plaintiff's Exhibit 10, made under my supervision
to a proportion in which the rocking lever member would be in proportion to an enlargement of the tube 11 of Fig. 1 to two inches in diameter; so that the spacing of the center of the pivot upon which the lever member is mounted, and the roller member which in Fig. 1 is termed 27, is the proportional distance when 27 is engaged, as I am now engaging it by the arm 28 as brought up to what it would be in comparison to a two-inch tube.

Merely for illustrative purposes, I mounted a spring underneath the lever member 29 that would urge the tube member downwardly when the lever member 29 was moved to a point where the roller 27 contacted the arm 28 at a point beyond the line that centers the roller 27 and the pivot pin member 32. I am again applying a card to illustrate what that center line means, and I can't on this device move the arm 28 beyond that line without the spring's coming into action and completing it. This little model merely illustrates the forces of gravity, the spring force of 15 and 12, which come into play at the proper time to aid in insuring the releasing of the latched members 27 and 28.

Q. 29. To what part of the tube, in cooperation with the lock or latch, is that spring force directly applied? A. The spring force is directly applied to the top part of the tube as shown in the housing when the door is in a closed posi-
tion, through the tube to the roller member 27 and
64 against the arm 28, the arm 28 being restrained from
rotative movement by the fuse link 24.

Q. 30. Mr. McNulty, I believe in your testimony just before the recess, you referred to the specification saying something about this tube being biased. I would like to have you point out to the Court just what parts of the specification you were referring to. A. I was referring to the part of the specification on page 2, beginning with line 11, which says, "In greater detail, objects of this invention are to provide a housed type of expulsion fuse in which the fuse tube is biased toward motion axially of the fuse tube."

Mr. Meroni: Your Honor, the specification is contained in the fore part of that certified copy, Plaintiff's Exhibit 1, and it comprises some twelve pages right at the front of the file history.

Your Honor, I would also like to call your attention to the fact that the original application also contains seventeen claims, which appear on pages 13 to 21 and are a part of the original application as filed.

The Court: What happened to the other fourteen claims? You say there were seventeen originally.

Mr. Meroni: There were something like fifty claims allowed in this case. These particular claims are claims 46,
48 and 49 that we are asking a patent on, and they
65 are the only ones that have been rejected by the Ex-

aminer, but it so happens that these three particular claims were involved in Patent Office interferences and we were denied the right to make them because the Patent Office ruled that it would involve new matter to permit us to make them.

Your Honor, you will also find after page 22 the two drawings that were filed with the application, and you will note that they coincide with these two exhibits, 2 and 3, which the witness has been testifying about. Those papers comprise the original application and it is to those papers that we must look in order to find a support for these claims. We can't justify a support for these claims in any of the remaining proceedings in that file history. In other words, unless we find support there, then the Patent Office ruling is correct.

Q. 31. Will you proceed, Mr. McNulty, with the testimony that you were giving? A. I will start again at line 11: "In greater detail, objects of this invention are to provide a housed type of expulsion fuse in which the fuse tube is biased toward motion axially of the fuse tube and downwardly and outwardly from the housing and is normally restrained from such motion by the fuse link, the rupturing
of the fuse link releasing the fuse tube and allowing
66 such outwardly biased fuse tube to be projected
downwardly and outwardly from the housing."

I explained in both the demonstration of the model and in the explanation of the drawing that it is these forces which biased the tube downwardly to move it outwardly to the dotted position in Fig. 1, which are always in a strained condition before the fuse link is ruptured. The forces there are ready to act as soon as the rupturing of the fuse link and the moving of the arm 28 get them into such play that they can cause the fuse tube to move downward, and it is the joint action of these outwardly biasing forces and the joint action of the spring 33 which effect the final releasing of the locking mechanism.

Q. 32. I would like to call your attention to the three charts, Plaintiff's Exhibits 4, 5 and 6, and ask you if you have had anything to do with the making of those charts, and if so, to testify as to just what you did do. A. Those charts contain claims 46, 48 and 49, broken up into paragraphs, the sequence of the wording being exactly in sequence as in the copies of the claims, and at the top of each I have put the claim number, the applicant's name, the serial number and the filing date. These are merely enlargements for convenient use in talking about the claim.

Q. 33. Who supervised the making of these charts? A. I did.

Q. 34. I would like to have you take one of them,
67 say, Claim 48, for example, shown on Plaintiff's Exhibit 5, and state whether you have studied the mechanical elements of that claim. A. Yes, I have.

Q. 35. Have you studied those elements in the light of the disclosure in the specification and drawings of this application? A. Yes, I have.

Q. 36. Will you then proceed to point out to the Court your understanding of these elements and wherein they have any basis or support in the disclosure?

Mr. Meroni: So the record will be clear, Your Honor, I understand, Mr. Cochran, that the issue here involved as to whether these claims are supported by the original disclosure is the same as to all the claims. That is the issue that is involved, is that correct?

Mr. Cochran: That is right.

Q. 36. (Continuing) I would like to have you proceed, Mr. McNulty, with your answer to my question as to this Claim 48. A. Claim 48 starts off with the words, "In combination"—I set these out separately—and then underneath it I have set out the various things which are the remainder of the claim and which constitute the combination.

After those two words, we find next, "A pair of
68 contacts." In Fig. 1 we have a gray terminal member 7 and a tan terminal member 8 in the housing

which are spaced apart. Connected to the terminal member 7 through the spring member 12 which I colored partially red and then colored with a darker gray color, the portion 13 which actually contacts the tube, we find one of the contacts of the housing. Connected on the terminal 8 and extending downwardly and outwardly therefrom are arms 9, which I colored tan, which are shown in side view in Fig. 1, and I am pointing to them again in Fig. 3 where the circular portions of the arms are shown in section contacting against the blue portion, so that 13 and 9 constitute a pair of contacts.

The next structural portion reads: "A fuse for connecting said contacts." The parts of the unit mounted on the door which constitute the fuse are all of the parts 14, 11, 10, 29, that are generally designated as a fuse, but the claim says, and I set it out separately, "Said fuse comprising." Now we will begin to analyze those parts.

Next it says, "A fuse tube having." Now, 11 is a fuse tube and it has certain things which the claim is going to next enumerate.

The next part of the claim reads, "Spaced terminals," the spaced terminals being the upper one 14, and spaced away from it a terminal portion 10 plus a rocking contact fastened to it which is a part of the terminal 29.
69 Those constitute spaced terminals.

Then the claim continues: "And being movable relative to one of them." That is, it goes back to the subject matter, a fuse tube having spaced terminals and being relatively movable to one of them. The tube is movable with reference to this entire lower terminal unit, 10 plus 29. As Your Honor saw, and as I illustrate now in Exhibit 7, when the tube moves, the terminal member 10 stands still; the lower contact part of it rotates outward but has a relative movement to the tube, so the tube is really movable relatively to that entire lower contact unit.

Then the claim continues: "Means for locking the fuse to at least one of said contacts." The locking means constitutes the portion 28 of the lower rocking contact member 29 in conjunction with a roller 27 which is fastened to the fuse by means of the collar 26 and a pin upon which the roller is mounted for rotative movement. These two parts together constitute means for locking the fuse to this lower contact terminal assembly 29 and 10.

Then the claim continues: "Means for moving the fuse tube longitudinally relative to said one of said fuse terminals to release said locking means." As I previously explained, the stored up power which is going to move, and which does bias the fuse tube downward at all times when the fuse link is not blown, is the means for moving the fuse tube longitudinally relative to this entire lower contact unit 10 and 29, and acts at the end of the movement of the lever 28 to finally assist in releasing the locking parts 27 and 28 for the downward vertical movement of the tube as described.

Q. 37. In your answer, Mr. McNulty, you have referred to the physical Exhibit 7. I would like you to point out, using that physical exhibit, the relative movement that you referred to in your testimony. A. I will first open the door of Exhibit 7 and place the locking members 27 and 28 into engagement, and then I will close the door so that the actual storing up of power by moving the springs 15 and 12 may be seen. By closing the door these springs are actually moved physically vertically upward.

Now when the member 29 is rotated, it has a relative movement rotatively to the tube 11, but at the end of its travel—and I managed to catch it just before releasing by restraining 29 with my finger—the forces biasing the tube downward have assisted and started and the tube has actually moved so that the collar 26 has moved away from the lower portion 10, as Your Honor will see, probably an eighth of an inch, and yet it isn't finally unlatched. So that that downward tube travel is brought into play at the final releasing of the locking members and there is again, then, movement between the blue member 10 and the

71 member 29 which continues to hold the end of the fuse link so that it helps to draw the fuse link out of the tube by the relative movement vertically between the tube and the member.

Q. 38. What has happened to the small spring on the pivot or the lever in its movement clockwise? A. The small spring 33 in the position shown in Fig. 1 has power stored in it which is going to be released—

Q. 39. (Interposing) Will you point out that spring, please?

By the Court:

Q. 40. That is the coil spring that is always operating clockwise? A. That is correct, it causes a clockwise movement. The force is being expended toward a weakened condition by the movement, as I will illustrate, of the arm 28.

Q. 41. In other words, your operation tightened the tension of the coil spring. A. Yes, sir; when I moved the member 29 up to the position it is in, in Fig. 1, that tightened that tension. Now that spring has to overcome the friction between the rollers 27 and the arm 28 and any friction which may be imposed by bending that flexible end of the fuse around the end of the tube after the fuse link has blown. As I say, that force is weakening all the way out and is less at the point where I have moved it than it was when it
72 was in the position of Fig. 1; so that at the point
where it is necessary to effect final release, we have still got the stored up power of the spring 15 to insure that final release. That is, there is no weakening of that power during that movement of the weakening of the spring 33 but the combined effort of gravity and the springs 12 and 15 act to assist spring 33 to effect the final release.

By Mr. Meroni:

Q. 42. Mr. McNulty, have you made a model of Fig. 4? A. Yes, I have.

Q. 43. I hand you what purports to be a wooden model, which I ask the court reporter to mark for identification as Plaintiff's Exhibit 11.

(The model of Fig. 4 was marked "Plaintiff's Exhibit No. 11 for Identification.")

Q. 43. (Continuing) Will you please state whether you have ever seen this model before, and if so, the circumstances incident to your having seen it? A. This model was prepared under my direction and illustrates correctly and faithfully what is shown in Fig. 4 of this application, with the proportion of the parts such that the tube 50 would have an outside diameter of one inch.

Q. 44. Mr. McNulty, we have had mounted on this stand here a chart marked Plaintiff's Exhibit No. 3. Did 73 you have anything to do with that? A. I hadn't quite finished my answer. I wanted to say that I have again cut out of this model the side portions of the housing 38 so that the inner parts could be easily seen. This model contains a fuse such as the member 64 in Plaintiff's Exhibit 3. It extends from the lower end where it is clamped by the nut 65 through the inside of the tube and up to the top member 49 which clamps it securely against the tube, such a fuse being of the type that I illustrated previously in connection with Fig. 1.

Q. 45. Does that model have a bracket on the back of it? A. It also has a bracket like the model, Plaintiff's Exhibit 7.

Q. 46. That bracket is for use in mounting it on Plaintiff's Exhibit 8? A. Yes, sir, that is right. I have opened the door and have pointed in the model to the fuse link coming out of the bottom and being attached to the nut which restrains the parts from movement as long as the fuse is intact.

Q. 47. Mr. McNulty, I don't know whether you have previously identified this chart, Plaintiff's Exhibit No. 3, but if you haven't, will you please proceed to identify it? A. Plaintiff's Exhibit No. 3 is a photostatic enlargement of Figures 4 and 5 of Application 727,250, and I have put the applicant's name, Schultz, the serial number and fil- 74 ing date at the top. I have applied colors to the various parts similar to the colors of similar parts in Fig. 1 and will explain these colors if you wish.

Q. 48. Mr. McNulty, have you made a study of the mechanical structure shown in Fig. 4 in the light of the specification of the application that is involved in this suit? A. Yes, I have.

Q. 49. Have you made a study of the operation of that structure as disclosed in that application? A. Yes, I have.

Q. 50. Will you please proceed to explain to the Court, using this chart, Plaintiff's Exhibit No. 3, and the model, Plaintiff's Exhibit No. 11, your understanding of this mechanical structure shown in Fig. 4 and its operation? A. The specification refers to Fig. 4 on page 7 of Your Honor's copy, beginning with the third paragraph, and describes the housing, 38, having a door, 39, the door being pivotally mounted to the housing at 40, and on the door is mounted a fuse structure held in place by means of a latch member 55, a member on the door, 56, a pair of spring members on the door, 57, and a part, 58, on the lower contact part of the fuse tube, and I have applied a little darker shade of color, a dark blue, to the member 58 that contacts the spring 57.

This entire unit is mounted on the door and swings
75 with the door. There is a part 52 which acts at the
top, with a hole 51 in it, so that the upper end of the upper contact member 49 extends in there to insure that when opening the door, the upper part will follow the door and not hang into the upper terminal members 46.

In this Fig. 4, the solid lines show the fuse parts in position prior to the rupturing of the fuse link. The dotted lines show the position of the fuse unit after the fuse link has been blown, and you will see that here, again, after the fuse link has been blown, the fuse tube drops downwardly and actually produces a gap between the upper contact 46 and the dotted position shown in Fig. 4, this being an actual air gap in the circuit.

In addition to that, there is the additional gap within the tube itself that I previously explained in connection with the model, Exhibit 7 and in the explanation of Fig. 1.

The specification explains that this embodiment has in it a spring 66 around the tube. Your Honor will remember the springs 15 at the top on the other one which I said start the downward motion, impart their energy to the downward motion as moving energy, and then let gravity continue the motion. In this one, the spring 66 is under a tension, being compressed between the housing 59 on the fuse tube and the contact member 48 which I explained is mounted on the door.

76 I have applied a yellow color to the tube portions 50 and on up to the extreme upper conical portion 49 which I colored dark blue. This housing again has spaced terminals 45 and 44 to which are connected contact members, the upper one being 46. I applied a gray color to the member 44 and the upper spring members 46. I applied a tan color to the terminal member 45 and to its contact members 47. These members carry the electrical current to and from the fuse unit. When the door is open, the upper end is withdrawn from the gray portion and as the door swings further downward, the blue part is withdrawn from the tan portion so that in re-fusing the unit the lineman may have a fuse to work with that isn't in contact with the electrical circuit.

The current, when the fuse has not blown, flows through 46 down through 49, through the fuse link 64, up through the brown arm 42, the fuse link being secured to it by the nut 65, up to the flexible leader 62 which I have colored blue, and to the member 48 which I have colored blue, and out to the member 47 which I have colored tan, to connect to the lower terminal 45.

In the position shown in Fig. 4, the unit may be said to illustrate the actual service condition where the fuse is unblown. When an overload comes on the circuit, the fusible portion will blow and release the lower member 42, and on page 7, in the next to the last line of the third paragraph, this member 42 is referred to as a rocking con-
77 tact member. This member, upon release by the

blowing of the fuse link, will rock clockwise as the arrow is shown in Fig. 4 to move with it an arm 61 which is in engagement with a roller 60, the roller 60 being secured to the part 59 of the fuse tube. You will see that the fuse tube 50, itself, is screwed into the part 59. I have applied a yellow color to 50 and 59, but I have applied an orange color to the roller 60 and a darker brown or sepia color to the arm 61 which is in engagement with it.

In this position where the link 64, which I have colored green, has not blown, the fuse tube is under the pressure of a coil spring 66 which is held between the lower end of the member 59 that is secured to the fuse tube and the upper end of the member 48 which is a part of the lower contact member and which is secured to the door. The fuse tube 50 is free to slide through the member 48 and has a movement relative to that member and to the member 42 which is termed a rocking contact member but which is pivoted to the member 49 at the point I am pointing to, which has no number in the specification.

Around this pivot pin is a spring member which also has no number but to which I applied a pink color, one end of the spring member being in engagement with the member 48 and the other end of it in engagement with the member 42,
so that this spring is exerting a tension, trying to
78 rock the member 42, and it is restrained from rocking
it by the fuse link itself. So that in Fig. 4, as in Fig. 1, there is a tension on the fuse link prior to its being blown by whatever tension is exerted by this unnumbered pink spring.

There is an additional tension in this device of Fig. 4 against the fuse link which would be whatever tension would be exerted by the spring 66 in its effort to advance the roller 60 and the tube downward. In this embodiment of Fig. 4, the arm 61 is shown as an integral part of the member 42 and is put underneath the roller 60 so that the spring 66 exerts its downwardly biasing force against the arm 61.

In Fig. 1, Your Honor will remember that the arm 28 had a circular portion to it. In this drawing, arm 61 has a con-

tact surface with the roller 60 which is not circular. By that, I mean it is not concentric with the center of the pivoted point of 42 which is not numbered, but as both Counsel have said, the specification doesn't say that that surface there is eccentric. The biasing action of the spring 66 trying to move the tube 50 downwardly comes against this arm 61 and whatever proportion of the force applied that tends to rotate that arm when 64 is broken comes into effect as soon as the fuse 64 is blown. The action of this fuse in its operation is like the one in Fig. 1 excepting in such relationship as comes in with this spring 66 that is so placed that
when the tube 50 starts down, the spring 66 continues to
apply its force through a greater distance of the ver-
79 tical movement of the tube 50 than it did in Fig. 1.
Gravity, of course, helps in both Fig. 1 and Fig. 4, because the parts have weight and once they are put into motion, they continue in motion until stopped, and gravity plus whatever momentum is given to them by the spring forces that bias them downward causes that downward motion, as the specification says on page 9, beginning with the second paragraph, referring to Fig. 4: "The operation of this form of invention is similar to that previously described with the exception that additional to the action of gravity, the fuse tube is urged downward by the spring 66 and thus is positively forced outwardly from the housing after the fuse blows."

Additionally to the force of gravity, which acts in both devices, and additionally to that biasing action of springs 12 and 15 of Fig. 1, spring 66 acts through a longer downward movement of the tube 50. The blowing of the link 64 releases the member 42 for rotative movement in a clockwise direction and this member is acted upon by two forces: the force of the coil spring which is unnumbered but which I have colored pink, and the force of the spring 66 which I have colored red. Both of these forces tend to help that arm 61 come out from under the latching roller 60 in unison. In this one it merely acts a little sooner than in Fig. 1. In Fig,

1 the lever member 29 rotates the arm 28 to almost releasing
position before the springs 12 and 15 can start the
80 tube downward. In Fig. 4, the lever member 61, to
whatever extent it isn't concentric in its surface con-
tacting the roller 60, permits a slight movement of the tube
50 downwardly prior to reaching the final releasing posi-
tion, but in both devices the final releasing action is similar
in that the forces which bias the tube to downward move-
ment cooperate with the forces which tend to unlock the lock-
ing mechanism to effect the final release; and in both de-
vices the tube itself moves downwardly after release, pro-
ducing this gap in the circuit which I have explained in its
electrical significance with Fig. 1; and in both devices the
tube protrudes from the bottom of the housing so that if a
lineman is looking for trouble and goes along looking at a
closed housing, he sees this tube projecting from the bottom
and he knows that that one has blown and is in trouble.

By the Court:

Q. 51. You say the tube will project from the bottom of the housing? A. Yes, sir.

Q. 52. How will the spring 66 exert its pressure unless
the tube is in some way fastened to the housing? A. The
lower end of the tube is fastened by means of link 64 to the
rocking contact member 42, which is held by the pivot pin,
which has no number but which I colored blue, to the mem-
ber 48 which in turn is held to the door through the
81 latch 55. These parts, the brown and the blue parts,
do not move vertically after the fuse link blows, but
the yellow parts move vertically and the lower end of the
yellow parts protrude from the housing.

May we put up Exhibit 7 just a moment?

By Mr. Meroni:

Q. 53. Yes. Would you please proceed with your testimony using that model? A. I just wanted to illustrate to Your Honor that this part which is now protruding from the housing is the yellow colored part of the tube and if the housing is all closed up, as it would be in service, the lineman coming along, seeing this tubular portion extending from the housing, would know at once that that fuse link had blown.

The Court: I can see it is true as to Fig. 1 but I couldn't see the same thing with the coil spring in Fig. 4.

Q. 54. Will you demonstrate that with Exhibit 11 which is a model of Fig. 4?

The Court: Perhaps this would be a good time to adjorn. We will adjourn until 2:00 o'clock this afternoon.

(Whereupon, at 12:45 p. m., an adjournment was taken until 2:00 p. m. of the same day.)

82 *After Recess*

Q. 55. Before we adjourned, we mounted this model, Plaintiff's Exhibit No. 11, which is a reproduction of Fig. 4, on this stand which is Plaintiff's Exhibit No. 8. Will you please proceed with your explanation of the operation of this structure and bear in mind the comment made by His Honor just previous to the time that we adjourned? Will the court reporter read that comment to the witness?

(The reporter read the comment of the Court: "I can see it is true as to Fig. 1 but I couldn't see the same thing with the coil spring in Fig. 4.")

A. In the model, Plaintiff's Exhibit 11, is mounted a fuse link like the physical exhibit link which I am holding in my hand, and the upper part of this link is clamped between the upper terminal member 51 which I colored dark blue in Fig. 4 and the top of the fuse tube. After this device has been demonstrated to blow as fuse I will take off that top part and illustrate how that upper part is left in.

The lower end of the link is shown extending out of the tube in Fig. 4 as member 64 and fastened by the nut 65 to the lever 43. I have colored 64 a green color.

We will now connect up the model, Plaintiff's Exhibit 11, so that the fuse link in it is actually in the circuit when the

switch on the box, Exhibit 9, is closed to close the electrical circuit. I have closed the switch and the current has
83 melted the fusible portion of the link and the fuse tube was expelled outwardly and downwardly by the action of the coil spring 66 (demonstrating), and now extends downwardly out of the box and acts as a visible indication that the fuse has blown.

By the Court:

Q. 56. The housing goes down with the fuse? A. The housing, Your Honor, is this stationary part that is fastened to the pole. The thing that goes down with the fuse is this portion which is called the fuse tube, you see. They have a certain designation here that the housing is the thing that actually houses the fuse unit and keeps the weather off it.

Q. 57. When you spoke of housing before recess, I thought you meant the outside portion of the tube itself. A. I see. In that sense the tube is a housing as it protects this fuse link from having the arc jump over from the upper terminal to the lower terminal. This is not in the specification and is not any part of this case, but the tube itself, being made of fiber, does assist in the putting out of the arc by generating arc quenching gases, and the purpose of the tube is to prevent the arc from jumping around and confine it within the tube, which in that sense is a housing.

But from the point of view of a support for the device and to house it from the weather, this back portion,
84 which in Fig. 4 is marked 38, the sides of which I have cut away in the model, Exhibit 11, is termed the housing; and on the housing the door portion 39, is pivoted so that it can be turned outwardly as I have done, entirely disconnecting the terminal members of the housing. Your Honor will see that I am pointing to a pair of U-shaped members in the top. Those are the members 46 at the top which are gray, and they engage the member 51, which I have removed, and which is a conical member that goes up in between these arms and forms the electrical contract.

You can see the marks of the arms on this upper contact member 51.

Here is the part of the fuse which didn't come out, and as you will see in re-fusing the tube (referring now to the model, Exhibit 11), the fuse link is put into the cartridge or the fuse tube and pulled down until the upper part or the head portion is in the position to be clamped between the upper contact member 49-50 and the metal member attached to the top of the tube.

Mr. Meroni: Let the record show that the witness has reinserted a new fuse element which he previously used in his demonstrations; and I would like to have that fuse element marked for identification as Plaintiff's Exhibit 12, in view of the fact that the witness has repeatedly referred to it.

(The fuse link referred to was marked "Plaintiff's
85 Exhibit No. 12 for Identification.")

Mr. Meroni: Let the record also show that the witness has removed that element, and I ask him at this time to reinsert the burned portion of the link that is on the Judge's bench so that it will remain in the same condition as it was when it was blown.

The Witness: In that case, take this part and put it with Exhibit 7 because it was a part of Exhibit 7 before it was blown.

Mr. Meroni: The witness has handed me the section of fuse link which was blown from the lower end of the tube in Plaintiff's Exhibit No. 7.

The Witness: It wasn't entirely blown out. It was partially blown out and I removed it.

Mr. Meroni: Let my remark be modified to that extent.

By Mr. Meroni:

Q. 58. Will you please proceed? A. I have moved the fuse tube unit 50 back up into operating position and have closed the door, and I am holding by my hand the member 42, to which the fuse link would be fastened by the nut 65,

and as I allow that member to be moved by the spring, the unnumbered pink spring, to rotate in a clockwise direction, Your Honor will notice as I move it backwards and forwards
that the lower portion of the fuse tube which pro-
86 jected from the box, and which is marked 59 in Fig.
4, correspondingly moves down. Now I move it back up and now I move it down. So that as I explained this morning, in this Fig. 4, when the fuse link is blown there is a joint movement between the tube itself and the lever; that is, as the lever arm 61 moves under the roller 60, the tube itself actually does have a downward motion, so that in this device, we have conjointly the application of the forces from the spring 66 and the rotating effect of the unnumbered pink spring to the lever 42, acting to cause the fuse tube to move sooner than in Fig. 1. In Fig. 1 the tube stayed still, as you will remember, until the lever 28 approached—

The Court (Interposing): The jumping off place.

A. (Continuing) The jumping off place is a good expression for it; and in both devices, the structure disclosed is such that the full force of all of the springs involved is employed to be sure that the final releasing takes place. That is, you can't divorce the action of those two stored-up sources of power. In Fig. 1 they act together for a shorter interval of time than they do in Fig. 4 and it is purely a question of timing as to what the difference between these two devices is. As I explained this morning, this spring 66 applies its power through a longer stroke, if you want to call it that, of the tube 50 than it does in Fig. 1; and as you saw when the device was operated, Exhibit 11, there was a
stronger downward push, a little louder noise, and
87 the end of the link was extended completely or drawn
completely out of the tube.

We have here again, with the tube in the position shown in Model 11, the two gaps, one between the upper terminal member or contact member 46 of the housing and the upper member 49 of the tube, an external gap; and we have within the tube a gap which is a continuously increasing gap as the tube 50 and the lever 42 falls while the gas expelled pulls the burned end of the link or the lower end of the link 64 out. In Fig. 4 and in Plaintiff's Exhibit 11, in addition to the spring 60 the force of gravity acts to aid that action. I will put in the part of the link that was in the model.

Q. 59. Please do so. Have you concluded your testimony in that respect, Mr. McNulty? A. Yes, sir.

Q. 60. Mr. McNulty, I have here this chart of Claim 48, Plaintiff's Exhibit 5, which you have previously identified. I ask you if you have considered the mechanical elements of that claim in connection with this Fig. 4 construction exemplified by Plaintiff's Exhibit 11? A. Yes, sir, I have.

Q. 61. Will you explain briefly to the Court what your observations are from that comparison? A. And point out the structures as I did before?

88 Q. 62. Will you do that, please, Mr. McNulty? A. Claim 48 reads, "In combination, a pair of contacts." In Fig. 4 this refers to the contacts 46 and 47.

The claim continues, "A fuse connecting said contacts, said fuse comprising." The fuse is the entire fuse assembly referred to, starting at the member 49 and continuing down clear to the end of the fuse unit.

The claim says, "Comprising a fuse tube having." That is the fuse tube 50. Continuing from the claim: "Spaced terminals." The terminal member 49 is at the top and at the bottom we have the part 48 which is colored blue, which is a lower contact to which is pivoted what the specification refers to on page 7, in next to the last line of the third paragraph, as a rocking contact member 42. This member comes on down and receives the fuse link.

The claim continues: "And being movable relative to one of them." That means that the fuse tube moves relative to one of the two contacts and it moves relative to the lower contact parts 48 and 42. They do not travel up and down, as you will see from Exhibit 11. The tube is dropped down but these parts 42 of 11, and 48, the blue part, stay still.

The claim continues: "Means for locking the fuse to at least one of said contacts." The part 61 of the rocking contact member 42 is the sepia colored arm which is in contact with the part 60 which is a roller mounted on a pin, or
89 two rollers—you understand there are two of these,
one on each side—secured to the member 59 which is screwed to the tube. These parts lock the tube against motion while the link 64 is not yet blown and it is fastened to restrain this motion to the rocking lever 42 by the nut 65.

The claim continues: "Means for moving the fuse tube longitudinally relative to said one of said fuse terminals and to release said locking means." The means for moving the fuse tube longitudinally relative to 48 and 42 is the spring 66 plus gravity, plus whatever downward start the spring arms 46 might give on the cone 49, but primarily the spring 66 causes the downward motion and acts together with the unnumbered pink spring around the pivot pin of the lever 42 to release the locking means.

Q. 63. Mr. McNulty, have you had a model made of the form of structure shown in Fig. 5?

A. Yes, I have. I produce such a model.

Q. 64. Will you produce the model and mount it on this stand, Plaintiff's Exhibit No. 8? A. Before I mount it, shall I show it to the Court?

Q. 65. Yes, please show it to His Honor.

Mr. Meroni: I would like to have the court reporter mark that for purposes of identification Plaintiff's Exhibit No. 13.

(The model made from Fig. 5 was marked "Plain-
90 tiff's Exhibit No. 13 for Identification.")

A. We have a unit such as is illustrated in Fig. 5 of Exhibit 3, in which the parts are all in proportion to the outside diameter of the tube 73 as a one inch diameter. This was made under my direction. The parts are properly in proportion and it fairly represents the showing disclosed in Fig. 5, and in the description relating thereto.

A link similar to Plaintiff's Exhibit 12 is in place connecting the upper portion of the fuse tube extending out of the bottom and fastened to the lever 71 in Fig. 5. In this disclosure again we find a spring around the tube similar to the spring in Fig. 4. It has a different type of lever connection to the spring which I will explain more in detail later.

Q. 66. Will you now mount that on the stand and then proceed with your explanation of the structural elements and operation of this form of structure shown in Fig. 5? A. I will refer to the large chart, Plaintiff's Exhibit 3, Fig. 5. In this chart we have a housing 38, a door 81 which is pivoted to the housing 38 at the point that I am pointing to. Mounted upon this door is a fuse unit. It is held in at the top at 75 by a latch and again at the point 76, these points securing the tube to the door in cooperation with the spring 79.

I have applied a yellow color to the fuse tube unit
91 which is generally designated as 73, having an upper
part 74, extending on down through and terminating in a casting 82 threaded onto the lower end of the tube 73. This casting bears a pin or pair of pins 83 which I have applied an orange color to.

Surrounding this casting is a member 72 which is a lower contact member and I have applied a light blue color to it. It has pivoted to it a member 71 which is referred to on page 9 of the specification, eight lines from the bottom, as the rocking member 71. I have applied a light brown color to it. I have again applied the gray color to the upper contact portion of the housing, a tan color to the terminal for the lower contact portion of the housing, and a pink color to a coil member 67 which has a lower end 69. The specification says that "The member carries a downwardly projecting pair of spring arms which are looped as indicated at 67 and which terminate in lower arms 69." I colored this pink because it imparts a rotative movement to the lower rocking contact member 71, like the pink coil spring in Fig. 4 which is unnumbered imparts a rocking motion to the lower contact member 42.

On this device, also pivoted onto the member 72 is an additional lever 84. This lever carries a contact locking arm which contacts the pin 83 and serves to function like the arm 28 in Fig. 1, except that it isn't as long as 28 is in
92 Fig. 1; and inside of the blue lower portion of the
contact member, which is 72, is a coil spring, 90. This coil spring is pressed at one end by the member 72 and at the other end by the yellow member 82 which is secured to the fuse tube, so in the position of the parts shown in Fig. 5, the fuse tube assembly 73 is being urged downwardly by the spring 90. That is what is meant by biased. It is trying to go but it can't go until it is permitted to go by the unlocking which will put the lever 84 in such position with reference to the other part of the lock 83 that it can release.

The levers 71 and 84 have arms respectively, 86 and 85, which I am pointing to, that act in such a way as would prevent an accidental unlocking of the locking parts of 84 and pin 83 by the relationship of the arm as shown in this figure. Also the lever 71 carries a cam surface 87 which contacts the arm 85, an outwardly extending portion 70 which contacts the spring portion 69, so that when the lever 71 is released by the blowing of the fuse, the springs 69 start and tend to rock member 70 clockwise as in Fig. 1, and the cam 87 transmits motion to the arm 85 to move 84 with reference to pin 83. I will demonstrate that in the model, and I have prepared an illustrated model which will illustrate the locking action of 84 and the pin 83.

Q. 67. I hand you what purports to be a model which I ask the court reporter to mark for purposes of identifica-
93 tion as Plaintiff's Exhibit No. 14, and I ask you if
you can identify it, and if so, to please do so.

(The model referred to was marked "Plaintiff's Exhibit No. 14 for Identification.")

A. This model is an illustrative model in which the lever 84 of Fig. 5 has been brought up to a size that would correspond to a two-inch outside diameter of the tube 73. I have illustrated the tube 73 merely by a vertical member with a spring around it to illustrate the spring 90. I have replaced the member 70 and the spring 69 which would rock the member 85 by a little handle on the shaft of the member 84 to illustrate its action by turning it. If you turn the shaft of the lever 84 slowly, you reach a point where the pin 83 is acted upon by the spring 90 to effect the final releasing action of the tube so that it can start in its downward motion, and this biasing simply means as I am pulling up on this spring of Plaintiff's Exhibit 14, the part I am pulling up is biased. There is power to move it downwardly as soon as I release the upward pull to allow it to go back down.

Q. 68. Have you concluded your testimony as to that model, Mr. McNulty? A. Except that I have not demonstrated the action of the model, Exhibit 13.

Q. 69. Will you please demonstrate the operation of that model to the Court, and in so doing, use this electrical box, Plaintiff's Exhibit No. 9? A. I have added to the showing of Fig. 5 in Plaintiff's Exhibit 13 a small shaft with a handle and a disk on the inside, the purpose of which will become apparent after I have operated the device. In the position it is now set, it doesn't enter into or come into play at all in the device, and the device except for that is an identical and faithful enlargement of Fig. 5. 94

I have connected the terminals into the upper terminals and the lower terminals of the housing, and again I have cut away the sides of the housing 38 so the inside mechanism will be visible.

By the Court:

Q. 70. Where is the other terminal on Fig. 5? A. The draftsman just didn't take the trouble to break this wall away and draw it in.

Q. 71. He left that to your imagination. A. Yes, sir. I believe he thought by the time we got to that, we would know there had been one, but he struck this out which corresponds to the part in Fig. 4.

By Mr. Meroni:

Q. 72. In that regard, Mr. McNulty, may I call your attention to Plaintiff's Exhibit 2, and more particularly to Fig. 2. Does that illustration show anything with regard to the link and tube? A. Yes, as I explained, this is a
95 view taken on the section line 2—2 of Fig. 1, looking
upwardly, in which the link itself, member 24, is shown in the center of the tube. I didn't apply a yellow color around it because I thought it would be clearer to leave it white. What you would see above that section would be the inside of the part of the link which would be this little washer at the upper end that is bound between the contact member 14 and the upper part of the tube.

Q. 73. What does the specification say in that regard, do you recall? A. You are referring to Fig. 1?

Q. 74. Yes, I am referring to Fig. 1, Mr. McNulty. A. Page 5, beginning in line 11, the specification says, "The upper and lower contacts are joined by the fuse link 24 in the usual manner."

I will now close the circuit over the link in Exhibit 13. The link burned. (Demonstrating) The lower end of it came entirely out of the tube. The tube unit protrudes below the box. The dotted view is not shown in Fig. 5, but it protrudes like the dotted view shown in Fig. 4, and the gap has been formed between the upper terminal which I colored dark blue of the fuse tube and the upper terminal which I colored gray in Fig. 5, and the electrical circuit, if an arc was to try to hold over, would have to jump that gap, go through the gases in the tube, come out at the bottom and up the link which is dangling and to the lever
96 71 and up to the lower terminal member.

I will now illustrate, first putting the parts back into the position where the latch members are engaged. The action of the little detent which I referred to is in this particular Exhibit 13. I have engaged the parts 83 and 84 and am holding the part 71 against movement by my hand. I have turned this little detent member into position where, when I rock the member 71 outwardly, it will interfere with the action of completely unlocking until I remove this small detent member, which I am now doing, and the final release in this one is under the control of the red spring 90 in Fig. 5.

I also call attention to the fact that in this Fig. 5 model, the pink springs, when they are expanded, are in contact—

By the Court:

Q. 75 (Interposing) By the pink spring, you mean the question mark? A. That is correct. The "question mark" is an excellent designation for it. They have expanded until the surface toward the tube lines up with the back surface of the part marked 70. At that point, those springs do not exert any further turning action, so that in this device we get a more complete releasing action from the spring 90 than in any other of the two other models that we have seen.

97 That is, in the position shown in Fig. 5, the spring 67 which is like a question mark is compressed by the movement of the closing of the door, and I will illustrate that in the model, Exhibit 13. Those springs in expanding forward—

Q. 76. (Interposing) It exerts pressure in a clockwise direction also? A. It does until the face of the spring lines up with the face of the part 70 of the lever 71. In that position, the force of that spring is practically expended. The other spring takes conjointly with it at the end of its travel the action of forcing the tube downward because it is already biased to move downward the minute it can so act. The specification says that this portion of the lever 84 which contacts the restraining pin, the pin 83, can be lengthened if you want an additional time element in it. But in all of these devices the final release between the locking members, that is between the pin and the arm, is under the influence of both the springs which cause vertical downward movement and the springs which cause the lever arm portion of the rocking contact to have been located.

By Mr. Meroni:

Q. 77. Mr. McNulty, have you in your study of this subject matter that is in suit compared the elements of Claim 48, that is the mechanical elements, with the structure of Fig. 5 as evidenced by this model, Plaintiff's Exhibit No. 13? A. Yes, and Fig. 5, Exhibit No. 3.

98 Q. 78. Will you please state the results of your comparison? A. Referring to Fig. 5, Claim 48 reads: "In combination a pair of contacts." At the upper part of Fig. 5 is a gray colored member which has no number and illustrates the upper contact of the housing. At the lower left-hand side of Fig. 5 is a pink colored member, 67-69, which as the Judge says, is in the shape of a question mark, and it represents the lower contact member. These two constitute a pair of contacts. The claim continues: "A fuse for connecting said contact, said fuse comprising a fuse tube." 73 is the fuse tube. The entire structure from the dark blue upper portion in this drawing, extending down clear through to the bottom, is a fuse unit.

The claim continues: "Having spaced terminals." The spaced terminals are the terminals at the top and the bottom. The top one has no number but I colored it dark blue. In its conical portion it engages the gray part. At the bottom is a portion 72 which I have colored blue, and pivoted on it is a lever member 71 which I have colored brown, this 71 member being referred to as the rocking lower contact member.

The claim continues: "And being movable relative to one of them." The tube is movable relative to these lower members 72 and 71.

99 The claim continues: "Means for locking the fuse to at least one of said contacts." The fuse is locked by the locking members 83 on the tube and the nose portion of the lever 84, and that locks it directly to the blue portion of the lower contact member.

The claim continues: "Means for moving the fuse tube longitudinally relative to said one of said fuse terminals to release said locking means." The spring 90 moves the tube longitudinally relative to the terminal 72 and the rocking part of it, 71, to release the locking means 83 as I have just demonstrated.

Q. 79. Mr. McNulty, have you compared the elements of the other claims 46 and 49 that are in suit with these three structures of Figures 1, 4 and 5? A. Yes, I have.

Q. 80. Without going into a lot of detail, will you state briefly what your observation was from that comparison? A. The claims are applied as I have applied Claim 48. 46 is applied to produce the positive gap and extend the same, as I have explained in each of these devices. The gap is produced and is extended as the fuse tube moves downward vertically and extends out of the housing.

Q. 81. Have you had photographs made of these five wooden models that you have testified about here today? A. Yes, I have.

100 Q. 82. These photographs are taken under different conditions of each model, are they not? A. I took the photographs, yes.

Q. 83. They show in some of them a closed condition? A. I can very quickly explain what they show.

Mr. Meroni: I didn't want to take a great deal of time, Your Honor. We have photographs here solely for the purpose of showing the models in the event they should be lost —sometimes that happens—and I would like to have these photographs marked for identification as Plaintiff's Exhibits 7-A, 7-B, 7-C, 7-D (those are the photographs of the Fig. 1 model, Plaintiff's Exhibit 7); Exhibit 10-A is the photograph of the diagrammatic wooden model, Plaintiff's Exhibit 10; Exhibits 11-A, 11-B and 11-C are the photographs of Plaintiff's Exhibit 11, the model which corresponds to Fig. 4; Exhibits 13-A, 13-B, 13-C and 13-D are photographs of this last model Plaintiff's Exhibit 13 which corresponds to Fig. 5; and the photograph, Exhibit 14-A, is a photograph of Plaintiff's Exhibit 14.

(The photographs were marked "Plaintiff's Exhibits No. 7-A, 7-B, 7-C, 7-D, 10-A, 11-A, 11-B, 11-C, 13-A, 13-B, 13-C, 13-D and 14-A for Identification," respectively.)

(Five-minute recess.)

101 Q. 84. Mr. McNulty, I have handed you a set of these photographs. Will you please state whether you have seen them before, and if so, please identify them. A. I took these pictures, setting the parts in the position shown. 7-A is a side view of the model Exhibit 7. 7-B is a view where I removed the door, turned it and mounted it on its hinge pin to the side of the housing so that you could look at both the inside of the housing and the inside of the door of Exhibit 7 at the same time. 7-C illustrates the position of the locking or latching parts, 28 and 27, when the member 29 contacts again the detent member that I said I added to the showing of Fig. 1 to illustrate the stationary position of these parts. 7-D is a view of the fuse tube unit supported on the door, this being a side view.

Exhibit 10-A is a view of the model, Exhibit 10, showing the parts raised so that the lever 29 and its arm 28 are in position to be engaged by the roller member 27.

11-A is a side view of Exhibit 11. 11-B is a view of Exhibit 11 in which I have removed the cover, turned it 180 degrees, so that you could look straight at the inside of the cover and the inside of the housing at the same time. 11-C is a side view of the fuse unit mounted on the door of Exhibit 11.

13-A is a side view of the model, Exhibit 13. 13-B is a view of model 13 with the door taken off and turned
102 so that you can look at the door and at the inside of the housing. 13-C is an enlarged view of the parts illustrated by a portion of the lever 71, most of the lever 84, with the pins 83 in engagement with a portion of 84. To get this picture, I put the surface of the member 70 in contact with the spring 69 and left it in that position, using the detent that I referred to to prevent the spring 90 from making a final release of the latching members 83-84. 13-D is a side view of the fuse unit mounted on the door of Exhibit 13.

14-A is a photograph of Exhibit 14 with the latching members in engagement.

Mr. Meroni: The Plaintiff now desires to offer in evidence on behalf of the Plaintiffs Schultz and Line Material Company the five charts, Plaintiff's Exhibits Nos. 2, 3, 4, 5 and 6. We also desire to offer in evidence the five models which have been produced here today and which have been identified as Plaintiff's Exhibits 7, 10, 11, 13 and 14. In addition, we offer in evidence the test box, Plaintiff's Exhibit 9, the sample fuse link, Plaintiff's Exhibit 12, and the stand, Plaintiff's Exhibit 8. We also offer in evidence this group of photographs which we have produced illustrating these models.

It is our intention by this offer to offer in evidence all of
the exhibits that have been referred to during the
103 course of the examination of this witness.

With that remark, I believe the Plaintiff has concluded its examination of this witness.

(Plaintiff's Exhibits Nos. 2, 3, 4, 5, 6, 7, 7-A, 7-B, 7-C, 7-D, 8, 9, 10, 10-A, 11, 11-A, 11-B, 11-C, 12, 13, 13-A, 13-B, 13-C, 13-D, 14 and 14-A, were received in evidence.)

Cross examination by Mr. Cochran

XQ1. Mr. McNulty, will you please now refer to Plaintiff's Exhibit 2, Fig. No. 1. I believe you testified that the springs 12 and 15 shown at the upper end of that figure bias the fuse tube downwardly and aid in the unlatching of the fuse tube. A. Yes, sir.

XQ2. Do you find anything in the specification of this application which supports your view that those springs bias the tube downwardly? A. Yes, sir.

XQ3. Will you point out that portion of it? A. On page 2, beginning with line 11, the specification says, "In greater detail, objects of this invention are to provide a housed type of expulsion fuse in which the fuse tube is biased toward motion axially of the fuse tube and downwardly and outwardly from the housing, and is normally restrained from such motion by the fuse link, the rupturing of the fuse

link releasing the fuse tube and allowing such out-
104 wardly biased fuse tube to be projected downwardly
and outwardly from the housing."

XQ4. Do you find anything that says that the springs do the biasing of the tube downwardly? A. I added to the springs the force of gravity, and at that portion of the specification the object of the invention is clearly stated as the biasing of the tube toward motion axially and downwardly.

XQ5. The biasing could be by gravity alone, could it not? A. May I finish my answer?

XQ6. Yes. A. When we get over to page 4, beginning with line 11, the specification says, "The upper terminal member 7 may be provided with a spring arm 12 whose inturned end 13 engages the upper contact 14 of the explusion fuse. If desired, an additional spring mounting 15 may be provided to bear against the inturned portion 13 and increase the spring pressure to improve electrical contact between the rounded upper end of the upper contact of the fuse tube and the member 13."

Now you can't fulfill that terminology without biasing the tube 11 downwardly in addition to the action of gravity.

XQ7. Is it not a fair assumption that the spring arms 12
and 15 are for the purpose stated in your last quoted
105 section of the specification, namely, to increase the
spring pressure and improve electrical contact at
that point? A. They do improve the electrical contact, but those words, "increase the spring pressure," tie right in with the biasing downwardly that I referred to. They do increase the spring pressure.

XQ8. My question is merely this: Is there anything in the specification to indicate that those springs are inturned to do anything more than make a good electrical contact at that point? A. Yes, sir.

XQ9. You think that gravity is not a sufficient bias to fulfill the stated object of the specification? A. Gravity is the bias that you can't prevent from acting, but the specification clearly teaches you to put a spring pressure on top of the contact member 14 or the upper terminal 14. That adds to whatever biasing effect gravity gives you.

Mr. Meroni: Mr. Cochran, will you pardon my interruption a minute? Am I to understand you are adopting a different position in that respect than the Patent Office did in its Examiner's statement, paper No. 53, dated December 10, 1941, which is a part of Plaintiff's Exhibit 1, wherein he describes Fig. 1 and says, "Referring to the drawing, applicant shows in Fig. 1 a fuse tube urged by spring
106 15 acting against contact 13, carried by the station-
ary contact 7, said tube being slidable through sleeve member surrounding the fuse tube and carried by the door"?

Mr. Cochran: My point and my position is this: that those springs were put there to make better contact. They incidentally may push the tube down but they do not push the same tube down with any such purpose and complete any unlatching of the holding unit. That is what I am coming to.

Mr. Meroni: The Examiner said, "After sector 28 passes beyond the rollers 27 the fuse falls due to the action of spring 15 and gravity."

Mr. Cochran: Very well. The spring may have pushed it to begin with. I think we had better argue this when the time comes for argument.

Mr. Meroni: I wanted to know if the Office was adopting a different position.

Mr. Cochran: I am entitled to take a different position from what the Patent Office took. This is a *de novo* proceeding. This is not an appeal.

Mr. Meroni: Thank you, sir; just so I know what your position is.

XQ10. Mr. McNulty, you have spoken of the springs 12 and 15 completing the unlatching of the fuse tube after it comes to a point which His Honor referred to as the
107 jumping off point. A. In conjunction with spring 33,
I said. I say the two act together and you can't divorce their functions.

XQ11. But your contention is that the springs 12 and 15 do have a function in the unlatching? A. Yes, sir.

XQ12. Do you find anything in the specification to that effect? A. Why, yes, sir.

XQ13. Will you please point that out—that the springs 12 and 15 now have a function in the unlatching? A. You find throughout the specification several places where the tube is biased downwardly. I understand, so that we will have a meeting of minds as much as we can, that you are not taking a position that the specification does not disclose that the tube is biased downwardly. That is the first step.

XQ14. That is not what I asked you. A. Before I answer your question, I want to get clearly—

XQ15. (Interposing) I am asking you where you find in the specification anything that says that the springs 12 and 15 have anything to do with the completing of the unlatching of the fuse tube. A. The parts that I read you
108 of the specification, which give you the object of
biasing the fuse tube downwardly, plus the parts which give you the action of the springs 12 and 15 as springs to increase spring pressure on top of the tube, teach me as a mechanic that the forces acting upon the tube all come into play on the locking mechanism all the time. That is, the arm 28 is under pressure from the rollers 27, from the springs 15 and 12, plus gravity, and that is there all the time. Now, it isn't an action in which you can disassociate the forces involved and have one set of forces act without the other set being in action at the same time. At the point where the latching mechanism and the portion of it which is represented by 28 comes beyond the line between the centers of the member 32 and the rollers 27, the biasing action on the tube 11 then helps the spring 33 to effect a release, and it is inherent in this structure.

XQ16. The spring 33 is sufficiently strong to swing the locking lever all the way around to the left, isn't it, up to the point where it comes— A. (Interposing) The specification says it tends to turn it.

XQ17. What else could turn it? A. The biasing action of the springs 12 and 15 and gravity will continue to turn it as soon as it passes the point of the center line between 32 and 27. You can't prevent it from doing it.

109 XQ18. I am speaking of the phase of the operation before the stud 27 gets to the point of the locking member. A. What was the first part of the question?

XQ19. The detent stud 27 stays where it is, doesn't it, until the locking lever swings around, until the point of the locking lever reaches the stud 27? A. No, it stays where it is until nearly the end of the arm 28 gets beyond the line between the points 32, the center line 32 and 27, but before it gets there, the spring 33 is pulling it against the pressure of the springs 12 and 15, and gravity.

XQ20. You mean frictional pressure? A. Frictional pressure, plus whatever frictional pressure comes from having to bend the flexible end of the fuse link around the end of the tube. As I said this morning, that is a variable.

XQ21. My question is, isn't the spring 33 strong enough to swing the lever around, under the circumstances you have mentioned, and unlatch the lever? A. It may not be.

XQ22. How does it come around if it isn't? What causes the lever to turn around its pivot 32 except the spring 33? A. The first part of it is only the spring 33. That is obvious.

XQ23. What do you mean, "The first part of it";
110 up to where? A. I mean movement to the point of
final release is only the spring 33.

X-Q. 24. It all happens in the wink of an eye, doesn't it? A. It all happens very rapidly but the forces involved are all in play at the same time. You can't divorce the action of springs 12, 15 and gravity.

XQ25. When the lever moves around until this point gets down here, this spring 33 has done all the work so far, hasn't it? It is sufficiently strong to do that. A. Yes. Your question is kind of indefinite—"down here."

XQ26. You understand my question. A. Of course I do. It must be strong enough to move the lever 28 from the position shown in Fig. 1 down to the position in line with the centers of 32 and 27, but when it reaches that position it gets assistance in making the final release.

XQ27. Does it need assistance? A. It may need assistance in many instances, yes.

XQ28. Beginning at that point, is any more force necessary to release the lever completely than there was just before it got to that point? A. There may be; it all depends upon the circumstances.

111 XQ29. What circumstances; this structure here or other circumstances? A. No, that structure right there. When the fuse blows, the turning of the lever is impeded by the action of bending the fuse link out, and as I said this morning, these devices go out in service in the field and stay there for years, and then when they are called upon to operate, any weathering that throws resistance into those parts means that it needs any help it can get in the final release.

XQ30. The spring 33 is strong enough to carry it around this far against all the frictional forces which are then in effect? A. Yes, it should be.

XQ31. Yet you question whether it is strong enough to carry over this very point. A. I didn't say it wasn't strong enough. I said at that point it inherently obtains help from the other springs 15 and 12, and gravity. It is weakening all the time, you understand, as it gets wider—that is, spring 33 is.

XQ32. Do you find anything in the specification which says that the springs 12 and 15 have any effect whatever in completing the release of this lever? A. It says it biases the tube to its outward movement.

XQ33. That could be true; when the things are not moving at all it would be true up here. It has nothing
112 expressly stated there about the point you have emphasized about these springs aiding in the final release of the lever after the stud passed the so-called jumping off point. A. Yes, it does. You understand this specification is directed to a person skilled in the art.

XQ34. Where do you find it in the specification? A. I read it to you.

XQ35. Is that your only answer? A. Yes, the biasing of this tube outwardly puts forces into play inherent in the structure, and you can't divorce it.

XQ36. Aren't you saying it is inherent in the structure rather than expressed in the specification? A. No, sir, I am not. It is expressly expressed in the specification.

XQ37. In the paragraph you read? A. Yes, and in the claims.

XQ38. Anywhere else? A. In the claims. Starting off with the original claims filed, Claim 1 says the fuse tube is "biased towards sliding motion to separate at least one of the spaced contacts from the corresponding stationary contact." That is Claim 1. Claim 2 says, "Biased towards motion outwardly from said housing." Claim 3 says, "Biased towards outward motion from said housing."
Claim 4 says, "Biased towards motion outwardly
113 from said housing."

XQ39. Mr. McNulty, will you refer now to Claim 13, the last four lines of that claim? A. Before we take the last four lines, let's take line 5: "A spring urging said fuse tube outwardly from said housing." The last four lines, did you say, or the last three lines?

XQ40. The last four lines: "The releasing motion of said latching means being independent of said first mentioned spring." Do you agree with that?

The Court: Where is that?

Mr. Cochran: Page 18 of the specification, Your Honor.

A. Certainly I agree with that. The releasing motion is just what I explained. The motion in the direction of the arrow in Fig. 1 is a releasing motion towards releasing position. Just back up a little bit a second: "A spring urging said latching means toward releasing position." Now, that is independent of this biasing action, but when it gets right to the end, to the releasing position, it isn't independent of it; the two work together.

XQ41. Is that your only explanation of that statement? A. Is it my own? That is my own explanation, yes.

XQ42. Is that your only explanation of that statement
in the specification? A. I don't understand exactly
114 what you mean.

XQ43. Is that how you reconcile that statement with the theory of operation that you have expounded? A. Why, I think it is directly the theory of operation that I expounded. You specifically asked me to refer to Claim 13.

XQ44. Yes, I did. A. Let's look at Claim 16. It uses the biasing action not only to the tube; it says, "A fuse tube slidably supported from said door and biased towards outward motion from said housing"; and then down a little later it talks about, "Mechanism including a lever biased towards releasing motion." Now that is the point I am making. It is biased toward releasing motion—both of them are, and when you get to the releasing part they both work together to effect the final release, and there is a real value in it in that you use all the power in the mechanism for the final release.

XQ45. Do you find any expressions other than the quoted statements you have made to support your theory that the applicant had this in mind when he wrote his specifications? A. I think all of the expressions in there are describing this particular type of latching mechanism in which he provides for a rotating motion. Bear in mind that this roller 27 down here is a round roller; it isn't a square lock. This
arm 28 is a rounded cam surface all designed and
115 lending itself to using the full power of all the
springs. That could be a square member on 27. You could have some form of a square sliding horizontal bolt in there, in which the release would be instantaneous and only by some member such as 33, but not in the structure shown here. These parts are disclosed and described in such a way that they must cooperate to effect a final release.

Mr. Cochran: That is all, Your Honor; I have no further questions.

The Court: Redirect examination?

Mr. Meroni: I don't believe there is any redirect, Your Honor.

The Plaintiff rests.

Mr. Cochran: If it please Your Honor, I offer in evidence the exhibit which I handed Your Honor at the beginning of the trial. The exhibit consists of prints of Plaintiff's drawings, copy of the Examiner's statement, copy of decision of Board of Appeals, and decision of the Board of Appeals on request for reconsideration of the application which is here in suit.

The Court: It may be admitted.

(The file referred to was received in evidence and marked "Defendant's Exhibit No. 1")

Mr. Meroni: What is your pleasure with regard to the conclusion of this case? Is it your desire that we
116 argue it orally or present briefs; or what is your attitude in the matter?

The Court: While the matter is fresh in my mind, I would be glad to have about ten minutes' argument from each of you at the present time.

(Ten-minute recess.)

Mr. Meroni: If Your Honor please, this suit, as Counsel for the Honorable Commissioner of Patents has indicated, is a trial *de novo*. It is not an appellate matter. If it were merely a matter of reviewing the Patent Office decisions, the proper procedure would have been an appeal to the Court of Customs and Patent Appeals. As I understand the practice before this Honorable Court, if the proceedings involved merely a review, this Court would not assume jurisdiction. It only assumes jurisdiction where there is new matter before it, that is, new evidence, and in this case we have offered evidence that was not before the Patent Office.

We have endeavored to establish by this evidence that the features of these three counts or claims, 48, 49 and 46, are clearly present in the structure as fairly disclosed in this

Schultz Application 727,250 as originally filed. We have endeavored to demonstrate, and have demonstrated, the operation of these devices by models which the witness, Mr. McNulty, has testified were fair and accurate reproductions of Figures 1, 4, and 5.

117 We have adopted the position that these three claims are what we call generic claims, that they are claims that are common to all three forms of this application; or as the Patent Office jargon goes, they are generic to all three species.

Counsel for the Commissioner has, in his cross-examination of our one and only witness, Mr. McNulty, referred only to Fig. 1. He did not interrogate the witness as to the other two species of forms evidenced by Figures 4 and 5 of the application and as illustrated in the models.

The Court: And in Figures 4 and 5, the spring pressure is all exerted from below, not from above.

Mr. Meroni: That is right, Your Honor. Counsel did not in any way endeavor to question the witness as to the action of those springs, and I think properly so since those springs are there for a purpose, and as everyone knows, a spring is to apply energy to something or to motivate something.

Your Honor, we have, preparatory to the trial of this case, reviewed the decisions pertinent to the issue that is in controversy, namely, the question of what is new matter, and to what extent an applicant may rely upon his disclosure as supporting claims that are essential in Letters Patent. I have furnished Your Honor with one copy of each of three decisions that we believe are pertinent to this

118 matter. In one of these decisions, *Bloodhart* v. *Martin* v. *Levenier*, by the Court of Custom and Patent Appeals—

The Court (Interposing): Does Mr. Cochran have a copy of this?

Mr. Meroni: Yes, Your Honor, I have given Mr. Cochran a copy—the Court of Custom and Patent Appeals pointed out what the test is with regard to a disclosure. The first decision in the volume that I have given Your Honor is *In* *re Manson.* I believe that is the first one and I will discuss that first. That is a decision by the Court of Appeals of the District of Columbia. It was decided at an early date, January 2, 1917. Practice, however, has not changed since that date with regard to what is necessary in a disclosure in an application.

You will note from the portion that I have quoted from the decision, the Court said: "The test of the applicant's right to make the claims of the amendment is well stated in the opinion of the Board of Examiners-in-Chief as follows (and the Court adopted that test): 'Did the appellant's application as filed present this inventive idea? The specification made no mention of any tilting action. The only ground upon which it might be held that the application as filed disclosed the tilting action is that this action is inherent in the structure as the same was originally disclosed, if those skilled in the art making the article
119 from the information furnished in the original application would naturally so construct it that it would be regarded as inherent in the applicant's disclosure and a necessary characteristic of his invention whether originally known to or appreciated by him or not.' "

In our case, our witness, Mr. McNulty, has very carefully pointed out wherein the specification did refer to the fact that this tube is biased downward. In fact, the original claims that were filed with the application clearly refer to that thought. According to the position of the Patent Office, evidenced by the line of examination, it would seem that the position of the Office is that unless you clearly state that a spring is for the purpose of exerting a spring pressure to do something, you are not entitled to all the inherent attributes of that spring. We say that at this late stage in the art, everyone knows what a spring is for, and that this application is addressed to those that are skilled in the art and not necessarily to someone that has no particular knowledge of mechanics.

We have in the application clearly illustrated the structure. The Commissioner of Patents, through his Counsel, has not questioned the fact that there is an illustration of a spring. He could not properly question that, in any event, because the specification does characterize it as a spring.

The specification also, in the case of Figures 4 and 5,
120 describes the coil springs encircling the tubes as being for the purpose of forcing the tube downward. We have pointed out that there is no clear line where you could say that the little spring acting on the lever stops functioning and the big spring associated with the tube or the coil spring, or as we have put it, a spring for forcing the tube downwardly, commences operation. Apparently the Patent Office has gone off on the tangent that you must consider that there is an abrupt line of cleavage between the action of these two springs. Well, that isn't so. A mere reference to the drawings clearly shows that the latching spring and the spring for moving the tube are both functioning contemporaneously. You cannot separate their action by saying there is a distinct line of cleavage.

The language of the claims that are here in issue is not a specific language. The language, as a matter of fact, is a broad language. It says: "Means for locking the fuse to at least one of the contacts." It doesn't even say a latch. It calls for a locking means, and as we have pointed out, the locking means comprises not only the latching arm but also the pin or roller; that without either of those elements, you would not have a lock. So that you must, as we view it, consider that the lock embraces both a latching arm and a pin or stud that is carried by the tube, and that pin or stud is at all times under spring force because the tube is spring-urged in all forms, including Figures 4 and 5.

121 Now in Figures 4 and 5, Your Honor, there is no question but that these red springs continuously exert, when the fuse is in a locked condition, a spring pressure on the pin or stud element of the locking device. That pressure is always there. The claim goes on the recite: "And

means for moving the fuse tube longitudinally relative to said one of said fuse terminals to release said locking means." If this spring force that is associated with the fuse tube and is always acting on that tube exerts a pressure on this pin, it follows that that spring force is going ultimately to act in the release of that locking means. That is particularly true, as was ably pointed out by Mr. McNulty, that the little spring on the lever is gradually using up its spring action as the lever turns, so that at or about the time that the releasing position is reached, its force is at a minimum, whereas the force of the spring associated with the tube is fully applied at that time.

I think the demonstrations clearly showed that the fuse tube came down with considerable force, and that that force was brought about by the release of this energy stored up in the spring associated with the fuse tube for motivating the fuse tube.

So we adopt the position, Your Honor, that it does not involve any new matter for us to contend that these claims are properly supported by this disclosure. We say that
122 these claims find a complete and fair response in all three forms of this application. It is true that before the Board of Appeals, the argument was confined for the most part to the matter of whether Fig. 4 supported the claims, and the Board went off on the side issue of whether we had disclosed that this lever in Fig. 4 had an eccentric surface; but Your Honor, the interesting part of that—and that was of considerable moment to me when I went into the case—is the fact that there is nothing in these claims that so restricts them. There is nothing in these claims that in any way limits the structure to the use of an eccentric lever, so that there is no necessity for having to resort only to Fig. 4 in order to find support for these three claims. We found, upon the construction of these models and upon an analysis of this specification, that these claims were fully and fairly supported by each of the three species and that they were properly generic claims.

The original claims, including, as I recall, claims 1, 3 and 5, are generic claims, so that it is clearly evident from the disclosure of the applicant as he originally filed it that it was his intention to claim these three species generically and broadly. These are other claims along the same line as those which have been allowed to the applicant, but they happen to be claims that were taken from another party's application who was a junior party, and an interference was set up and the party Schultz, although the senior
123 party, was eliminated from the interference, solely
on the ground that these claims were not supported by this disclosure. As to all subject matter that was common to the party Schultz, and as senior inventor, we contend, Your Honor, that it would work an injustice to permit an applicant that is not the first inventor to have these claims despite the fact that the applicant Schultz was the senior applicant. We therefore ask, Your Honor, that the decision in this case be that these claims are clearly supported by the disclosure and that the Commissioner should order a patent issued to the applicant Schultz with these three claims.

The Court: Now Mr. Meroni, the specifications emphasize that the tube has a biasing action. Does it necessarily follow from that expression that that bias necessarily is caused by a spring force? As this evidence has been going in, I have been impressed that the average reader would get this impression: Especially with wording such as is contained in 48 and 49, "Means for moving the fuse tube longitudinally relative to said one of said fuse terminals and to release said locking means," it would convey to the mind, I say, of the average reader that that means must comprehend spring force of some kind and would comprehend both springs, both the upper and the lower spring.

But here I run across your exact language in Claim 13 where, in making specific reference to the upper
124 spring, you say, "The releasing motion of said latching means being independent of said first mentioned

spring." I am impressed with this thought. Although, of course, that applies just to Fig. 1, yet is it possible that the average reader would assume that you don't place any reliance upon the action of the upper spring, or in 4 and 5, the two coil springs act as a contributing factor toward accomplishing the unlatching?

Mr. Meroni: Your Honor, I would like to answer that query, if I might call it such, in this manner. An applicant is permitted considerable leeway in his choice of language in claims. He is permitted in our present practice to claim his invention both broadly and also in its narrower aspects. I think, as you have properly indicated, that it is possible that the applicant endeavored in that claim to claim more narrowly the species shown in Fig. 1, but you will note that even in that statement, he did not say anything about the release of the locking means. He referred to the latch. Now the lever in the specification is referred to as the latch.

The Court: Aren't the latch and the locker the same thing?

Mr. Meroni: I take the position, Your Honor, that in this particular case we have a latching arm and we have a pin that cooperates with that latching arm to form a positive lock, and that to merely move the latching means relative
to that pin does not necessarily effect a release of the
125 lock. The lock is not released until the lever is
thrown entirely clear of the pin and the pin moves
clear of the lever.

I also call your attention to the fact, Your Honor, that the language you have referred to does not necessarily mean that the means for moving this lever is the only means. It is true in Fig. 1 (not in Fig. 4, however) that initially as this lever moves, it does move independently of this spring force. We must concede that; that is, initially it does move independently just as that claim says, because of the fact that the arc on this lever is concentric with the pin, and that movement is independent. But it doesn't follow from that statement that before your lever is moved into an unlocked position, this spring cannot come in and function to effect a final release of the lock.

Moreover, Your Honor, if you will look at Claim 3, on page 13, it says: "A fuse construction comprising a housing"—that is your porcelain box—"a door for said housing"—that is your hinged door—"said housing having stationary contacts"—that is the contacts to which your power leads are connected—"a fuse tube slidably supported from said door and biased towards outward motion from said housing, said fuse tube having spaced contacts normally engaging said stationary contacts"—that is the contacts to the tube for cooperating with these in the box—"a fuse link electrically joining said spaced contacts"—that is the
126 link inside the tube—"and mechanism controlled by said fuse link for holding said fuse tube against sliding motion."

You will see that that claim, which stands alone, is a claim that stands generic to the invention, so it is perfectly clear that the applicant was claiming his invention broadly and that we are not exceeding the bounds of this monopoly in claiming the invention in the manner expressed in Claims 46, 48 and 49. They are slightly narrower claims than this Claim 3. The Claim 13 that you have referred to is a slightly more specific claim. It is in reality more directed to this phase of Fig. 1 wherein the latching arm can, to a limited extent, have an independent movement of the spring acting upon the fuse tube.

Your Honor, I would like also to call your attention to the description of Figures 4 and 5, and you will note that in those descriptions, reference is clearly made to the spring around the tube, the coil spring, urging the tube downwardly. For example, on page 9 of the specification, the second paragraph, we say, "The operation of this form of the invention is similar to that previously described," and then we go on to point out that in addition to the action of gravity, the fuse tube is urged downwardly by the spring 65, and thus is positively forced—

The Court (Interposing): By spring 66?

Mr. Meroni: That is this spring here and it is the
127 same spring in Fig. 5: "... is positively forced outwardly from the housing after the fuse blows."

Now my opponent, Mr. Cochran, who represents the Patent Office, did not interrogate the witness as to Figures 4 and 5, and if Your Honor were to find that these claims are supported by Figures 4 and 5 and were to find that they are not supported by Fig. 1, we would still be entitled to a patent with those claims because our disclosure would support them. In other words, the mere fact that one figure or even two figures do not support the claim still would not preclude your granting us a patent if you found in any one of them an adequate support for the claims.

Mr. Cochran: That is right, Your Honor; Mr. Meroni's statement is correct there. I accede to that.

The Court: Referring back to your discussion of Claim No. 3, you construe that as being very broad language. Is it broad enough in its language to cover an automatic ejection process?

Mr. Meroni: I haven't thought of the claim in that light.

The Court: "... and mechanism controlled by said fuse link for holding said fuse tube against sliding motion."

Mr. Meroni: It would cover most any device wherein the link would cooperate with that device in holding the tube against sliding motion, or, in other words, in its
128 locked position, and that would be more or less any automatic mechanism, as Your Honor has indicated.

The Court: I just wanted your idea on it.

Mr. Cochran!

Mr. Cochran: Your Honor, a number of claims have been allowed in this case, as Mr. Meroni has told you, but these three claims have been rejected on the ground that the specification here, the application, will not support these three claims. The controversial clause in the three claims is the last clause, we will say, in Claim 48 shown on the large chart.

The Court: "Means for moving the fuse tube longitudinally relative to said one of said fuse terminals and to release said locking means"; that is what you mean?

Mr. Cochran: That is to say that the means which moves the fuse tube longitudinally is the means which releases the locking means. You move the fuse tube longitudinally to release the locking means. That is what that claim says, and that is what the other two claims say.

The Patent Office's position is that that is contrary to the disclosure of this application. Not only was that not said to be the operation in the application, but the contrary was said to be the operation, namely, in this Claim 13 which says that the relasing motion of the latching means is
independent of that coil spring shown in Fig. 4,
129 for instance, and in Fig. 5, for instance.

The Court: Or spring 15 in Fig. 1.

Mr. Cochran: That is right. That is the only statement we find anywhere in the specification relative to this particular operation, and that statement is contrary to what these claims call for, Claims 46, 48 and 49.

This theory of operation now urged by the Plaintiff was certainly not in the application as filed. It is an afterthought to cover up someone else, some other man, including these three claims. It is true that the Plaintiff may have some broad claims allowed in his case which might blanket this whole field, but that doesn't entitle him to make a claim to a very particular, specific thing which he doesn't have at all in his application.

Now it might be that these demonstration models here, with the springs made as they are made here—the specification doesn't say how strong any of the springs is or anything like that—will operate somewhat in the manner specified by the claims. That is, in Fig. 4, for example, perhaps the large spring indicated in red will force down the latching stud 27 somewhat, but that is a thing that was not mentioned in the specification, nor was it mentioned in any of the claims to begin with. That is a new theory of opera-

tion and it is not necessary to enable a successful operation of the device. According to the description, the latch-
130 ing means is withdrawn by means of the little coil spring which is shown in——

The Court (Interposing): It is unnumbered on 4, but it is the same spring that is to be found in Fig. 1, I believe.

Mr. Cochran: Fig. 1 is the one which calls that spring No. 33. It is a spring which withdraws the locking means from engagement with the stud. That is the operation described in the application and now, in order to support these three claims, Plaintiff insists that that spring will act in Fig. 1 on the extreme end of the locking member; that after the little spring has brought it up to the jumping off point, the other spring will act to complete the release, but my contention is that the release is completed as soon as the jumping off point is reached, and that is all done by the little spring coiled around the axis of the locking member.

Plaintiff has nothing here to rely on in his specification to support his position. In fact, as I pointed out, the only thing stated is contrary to his position. All he has to rely on is the drawing. Now, it has been held that a drawing is not sufficient to support a claim. In fact, the statute requires that the specification describe the matter fully and that it conclude with it a claim which specifically points out new matter. There was no such claim in the case as filed, and no such specification either.

The Supreme Court in *Permutit Co.* v. *Graver Cor-*
131 *poration,* 284 U. S. 52, made reference to this matter of the sufficiency of a drawing to support a claim. The Court said, "While drawings may be referred to for illustration and may be used as an aid in interpreting the specification or claim, they are of no avail where there is an entire absence of description of the alleged invention or a failure to claim it. The statute requires the patentee not only to explain the principle of his apparatus and to describe it in such terms that any person skilled in the art

to which it appertains may construct and use it after the expiration of the patent, but also to inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which feature may be safely used or manufactured without a license and which may not."

That latter part refers to claims, of course, but here the Plaintiff not only did not describe this operation in his application as filed but he described the contrary operation. The tribunals of the Patent Office have found that the Plaintiff is not entitled to make these claims and I think their holding should not be overturned unless Your Honor should find that they are manifestly wrong in their conclusions.

The Court: This 4915 is an equity case tried *de novo,* and yet it bears a certain resemblance to an appellate procedure
in that the decision of the administrative agency
132 will not be reversed unless the evidence makes their
position clearly inconsistent.

Mr. Cochran: That is the *Abbott* v. *Crowe* doctrine announced by the Court of Appeals recently.

The Court: Mr. Cochran, early in the hearing this morning there was some reference to your position of this hearing being inconsistent with that of the Examiner. I haven't read the Examiner's report, but what do you have to say about that?

Mr. Cochran: I don't know how inconsistent it would be, but if there is any question, Your Honor, about the springs in Fig. 1 aiding somewhat in biasing the tube outward to help eject the tube after the release of the locking means, I won't quarrel with that. I think that any spring pressing down, even lightly, to make a better electrical contact, will aid somewhat in kicking the tube out after the locking means has been released. Does that meet that objection, Mr. Meroni?

Mr. Meroni: I think that that is the point that I raised with regard to inconsistency. The Examiner never examined the fact that this disclosure contemplated that the tube would be urged by that spring, and I wanted to call that to Mr. Cochran's attention, because I didn't know whether it was intentional on his part or not, and I wanted to advise him of that.

133 Mr. Cochran: But that is not at all damaging to my position that in none of these cases does the spring have anything to do with the unlatching of it; that is the point, whereas every one of these claims calls for it. That is to say that the means which moves the fuse tube longitudinally—that is the spring—releases the locking means. I say that the fuse tube is moved after the locking means is released and it may be a spring in any case or it may be even gravity alone in Fig. 1, but I will concede it might also be aided by the springs 12 and 15, but in no case does the movement of the tube release the locking means as described in the specification. In fact, the contrary was the case.

The Court: Any rebuttal?

Mr. Meroni: I would like to make a point or two, Your Honor. In the first place, it isn't the spirit or intent of the practice prevailing with regard to patents to construe a man's disclosure in such a way as to defeat the entire intent of that disclosure. We have here a disclosure that has been pending in the Patent Office since 1934. It has gone through a great many interferences. It has been subjected to a great many delays by reason of these interferences. To hold as contended by the Patent Office here is in reality to hold that these structures do not accomplish the very thing that they are designed to accomplish, the very thing that is set forth in the objects of the disclosure. To hold
134 with the Patent Office is to say, "We can find an exact line of clearance where the spring pulling on the lever discontinues its operation and the other spring thereafter comes into play." We don't have a construction here where the lever is pulled out and the tube stays up there for an interval of time and then is forced down. That is an inconceivable arrangement. That thing doesn't stand up there in thin air; it has to be motivated downward. Why

did the applicant go to the trouble of providing these big coil springs if all he was interested in was merely to put a little pressure on there? He could have put even a lighter spring at the top to assist in moving the tube. This applicant put in very substantial springs around the tube. He has disclosed that those springs—

The Court (Interposing): Of course, these larger springs, the coil springs in Figs. 4 and 5, accomplish the same result of improving the contact at the upper end as your spring 15 does.

Mr. Meroni: That is right. Your Honor, but they have a little more force, as we showed in the demonstration.

Maybe I misunderstood you. If what you meant was that the sole purpose was to improve the contact—

The Court (Interposing): I don't say that was the sole purpose, but they do have the same effect.

Mr. Meroni: They will maintain a taut relationship in
there, there is no question about that, but we contend
135 that you can't say that this lever here is motivated
by this spring to a completely released position and
that this tube stays up there until that happens and is forced downwardly. That just can't happen, and to so construe it would be to render the whole structure a nullity, so to speak, because that isn't the spirit and intent of the disclosure as evident to a person who is skilled in the construction of devices of this type.

It is perfectly clear that this lever does move under the effect of this small spring and does move in a clock-wise direction toward an unlatching position, but it doesn't flow from that that this spring has nothing to do with the unlocking. It certainly is effective. It is there; its energy is stored up so that it will be effective in effecting a final release of that lock.

The disclosure clearly says that when the link blows on these structures this spring ejects the tube. That is disclosed, and at the same time it also forces this lever clear.

In Fig. 4, Your Honor, the reason this spring is not numbered is that it is not described. There is no description

of that little spring, apart from the description of it in Fig. 1. This lever has a cam surface that is not concentric to that pin; that is, it is not a true circle around that pin. It is eccentric, and as Mr. McNulty demonstrated, the moment this link blows, this tube starts to move down, because that pin riding on this cam surface is brought
136 downwardly under the force of that spring.

The Court: With the position of the pin on that eccentric curve.

Mr. Meroni: That is right.

The Court: Tell me more about the Board of Appeals.

Mr. Meroni: The Board of Appeals said, "That is there, but you didn't say it is an eccentric curve; therefore, even though it is there, you can't make a claim on that." I believe that is in effect their decision.

Mr. Cochran: Yes. It may have been an accidental showing, but since it wasn't described, therefore it was not a disclosure.

Mr. Meroni: And the Patent Office later withdrew the accidental disclosure and relied on new matter. The record shows that. We argued that the Examiner was unwarranted in rejection on the ground of accidental disclosure, so he then shifted to rejection on the ground of new matter, and his rejection is based solely on the ground of new matter, as he puts it.

The Court: But it wasn't precisely, I take it, because of the relation of that pin to that eccentric curve that the up-and-down spring pressure was able to exert itself at all in the direction of the unlatching operation.

Mr. Meroni: That is right. In that form, we have a much clearer picture of this spring force acting to
137 unlatch the lever because it starts right initially with
the initial movemnt of the lever, and that is why apparently that figure was selected among the three as affording a support for the definition in these three claims. But our position is that that action is more or less present in all of these forms, only not to the same extent as it is in Fig. 4. In Fig. 1, our position is that the end of that lever when it gets around to this point then becomes a cam end

and this pin has to be forced over that cam surface, once it is beyond this line joining the centers of this pin and this middle pin, so you have it there too, in a lesser degree, but you have it here in a very positive character, because the minute that moves this pin moves down under the effect of that spring, and the tube is moving the whole time that that lever is moving.

Our position was that that is inherent. Any mechanic building that would see that. The decisions are uniform in saying that if something is inherent, you have a right to describe what you have shown. The Board of Appeals adopted a narrow position that while that was eccentric we had not so described it and therefore we were barred from claiming that characteristic. But it isn't the intent of our laws to defeat a man's right to a patent on some technicality where he has a disclosure of this character which would suggest to one skilled in the art how he could build a complete device, and we contend that these models have been constructed by a man skilled in the art. Mr.
138 McNulty is skilled in the art. He has followed these drawings very religiously, and we contend that these are fair representations. The Patent Office hasn't put in any evidence to show that they are otherwise, and we submit that we have established our purpose in this case.

Now, Your Honor, what is your disposition in the matter of briefs in this case?

The Court: I can tell more about it after I have read the authorities you have already given me.

Mr. Meroni: That is entirely satisfactory.

Mr. Cochran: May I have just a word, Your Honor, about Fig. 4? Mr. Meroni's statement concerning what happens in Fig. 4 in the matter of this tube starting down right away is in conflict with what was said in the specification on page 12 at the top of the page. This statement refers both to Figs. 1 and 4: "It is to be noted, particularly with reference to Figures 1 and 4, that the latching means has an elongated sector-shaped portion 28 and 61, respectively," it is 61 in Fig. 4, "that holds the fuse tube in place during the period that the arc is being extinguished within

the fuse tube and the link is being withdrawn from the
fuse tube," that is to say when this lever swings around to
withdraw the link from the fuse tube. "This insures the
retention of the upper contact of the fuse tube in engage-
ment with the upper stationary contact during this inter-
val." In other words, the fuse tube stays up there in
139 contact all during the time that the lever is coming
around and withdrawing the exploded fuse link, and
that is contrary to what is now said about this tube starting
down right away, as soon as the fuse blows.

The Court: This contemplates not even an infinitesimal downward motion during that process.

Mr. Cochran: That is right, and that is somewhat inconsistent with the showing of the cam movement. It all goes to show that the specification taken together with the drawings is not at all clear in demonstrating that any such operation as recited here was ever intended.

Mr. Meroni: On that point I call your attention to the fact, Your Honor, that this little nipple up here at the top has some extension and that contact will be maintained for a limited extent as that moves down. It doesn't break contact right away. It slides down here, and that is all that sentence says.

Mr. Cochran: It is conical in its mid-parts.

Mr. Meroni: It doesn't necessarily mean there is no movement of the tube. The contact is still preserved there.

The Court: Is there side contact in that conical extension?

Mr. Meroni: It is shown in this drawing, Your Honor.

Mr. Cochran: Shown on the drawing instead of the model.

140 Mr. Meroni: These are two prongs up here, one engaging each side of the conical portion, as shown in here.

The Court: These exert spring pressure on the side of the cone?

Mr. Meroni: Yes, so you can have a limited movement there before the contact is actually broken. Those are the two prongs. (Examining Exhibit No. 11)

The Court: When the contact is entirely on the two sides—

Mr. Meroni: That is right, Your Honor.

The Court: —there is no end contact.

Mr. Meroni: That is right, so you could have a limited amount of movement before the contact is broken.

Mr. Cochran: May I have about a day to put in authorities? I hadn't prepared any list of authorities. May I have a day or two on that?

The Court: I will be glad to have them. It will be more than a day or two before I can get this case decided.

If that is all, we will close the record.

Mr. Meroni: If Your Honor desires additional briefs, we will be glad to submit them. I would like to have the same privilege of filing additional authorities on this matter as has been extended to Mr. Cochran.

The Court: Very well. May I count on the authorities from both sides being in within ten days.

(Whereupon, at 4:00 p. m., the hearing was ad-
141 journed.)

142 Reporter's Certificate

Washington, D. C.
November 20, 1942.

I hereby certify that at the time and place aforesaid I reported stenographically the foregoing proceedings and, to the best of my knowledge and belief, this is a true and correct transcript of said proceedings.

FLOY LINN

Subscribed and sworn to before me this 27th day of November, 1942.

Pauline E. Goebel,
Notary Public.

My Commission Expires June 1, 1946.

(Seal)

III.

EXCERPTS FROM APPELLANTS' EXHIBIT NO. 1 (File History of Schultz Application, Serial No. 727,250).

152 To All Whom It May Concern:

Be It Known, that William O. Schultz, a citizen of the United States, residing at South Milwaukee, in the County of Milwaukee and State of Wisconsin, has invented certain new and useful improvements in fuse constructions of which the following is a specification.

153 This invention relates to fuse constructions and is particularly directed to a drop-out type of fuse.

Objects of this invention are to provide a novel form of fuse, such as the expulsion fuse type, in which the fuse tube operates first in the manner of an expulsion fuse, then moves downwardly and increases the gap in the circuit, and finally comes to rest projecting outwardly from the body portion so as to give a visual signal indicating that the fuse has blown.

In greater detail, objects of this invention are to provide a housed type of expulsion fuse in which the fuse tube is biased towards motion axially of the fuse tube and downwardly and outwardly from the housing and is normally restrained from such motion by the fuse link, the rupturing of the fuse link releasing the fuse tube and allowing such outwardly biased fuse tube to be projected downwardly and outwardly from the housing.

Further objects are to provide a construction in which the lower fastening means for the fuse link is so constructed that it tends to quickly withdraw whatever remains of the lower portion of the fuse link from the fuse tube, such action being also assisted by gas pressure generated within the fuse tube, so that the combination of these two features insures the extinguishing of the arc within the fuse tube in a much shorter time than with the usual type of expulsion fuse, the fuse tube itself subsequently sliding vertically downwardly and increasing the gap formed in the circuit.

Further objects are to provide a construction in which

Print of drawing as originally filed.

Fig. 1

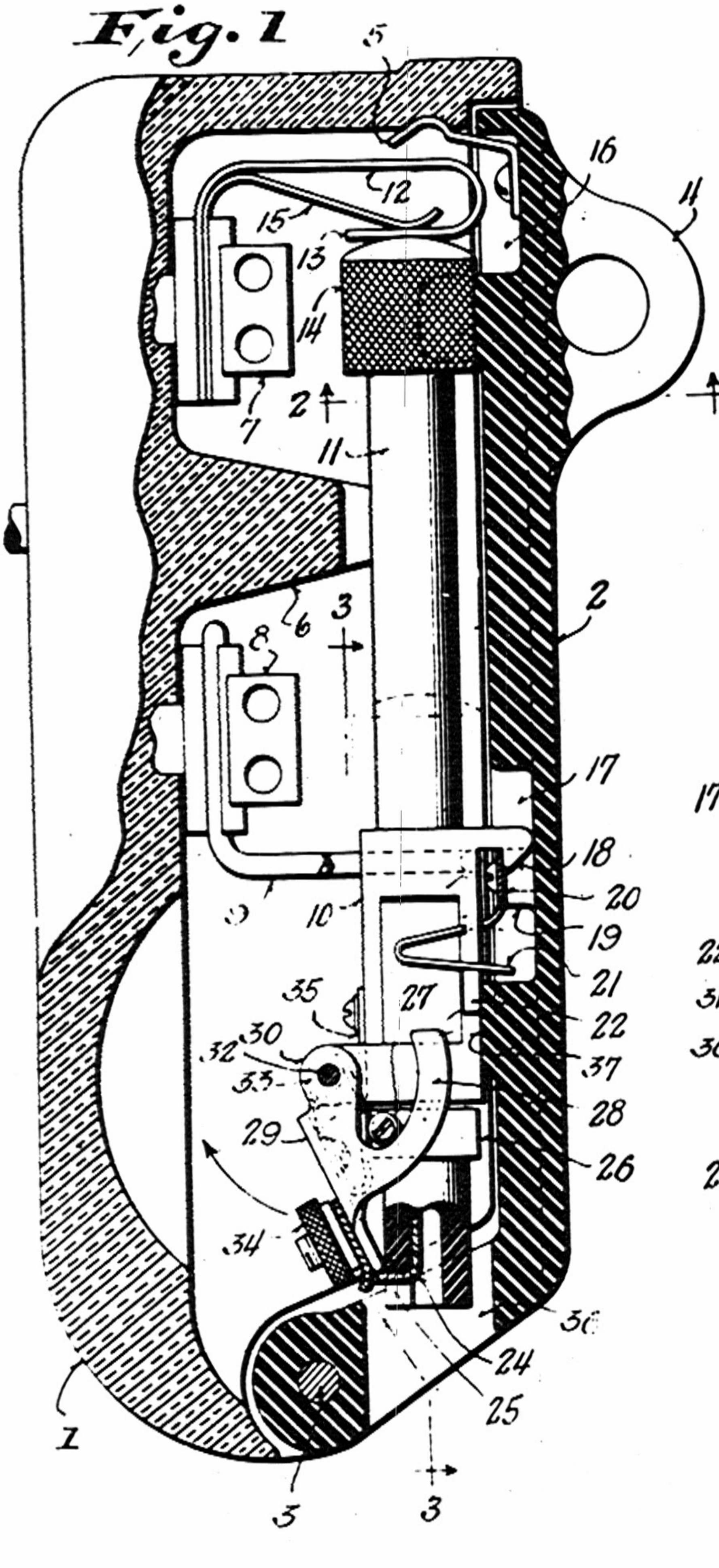


Fig. 2

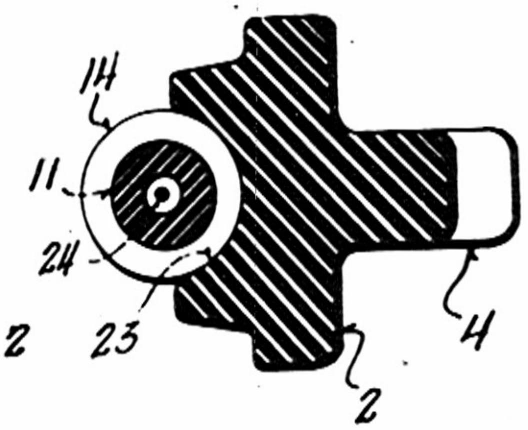
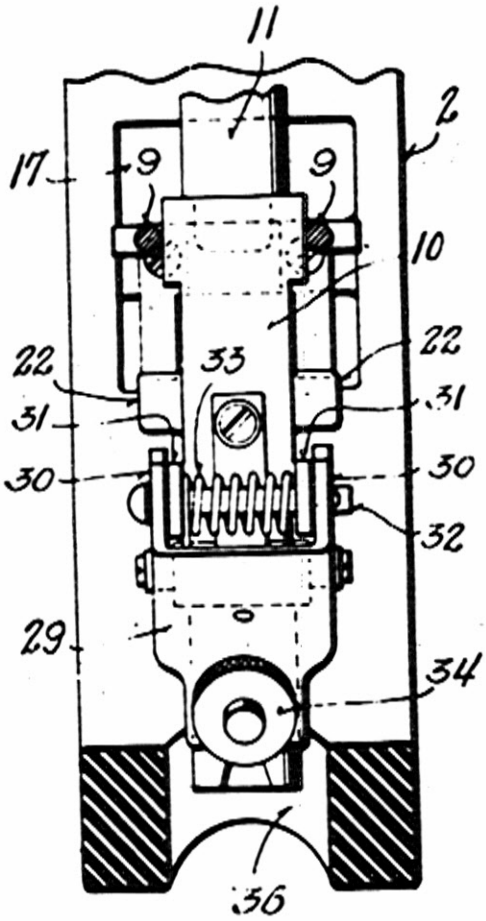


Fig. 3



INVENTOR
William O. Schultz
BY
Arthur R. Woolfolk
ATTORNEY

Print of drawing as originally filed.

Fig. 4

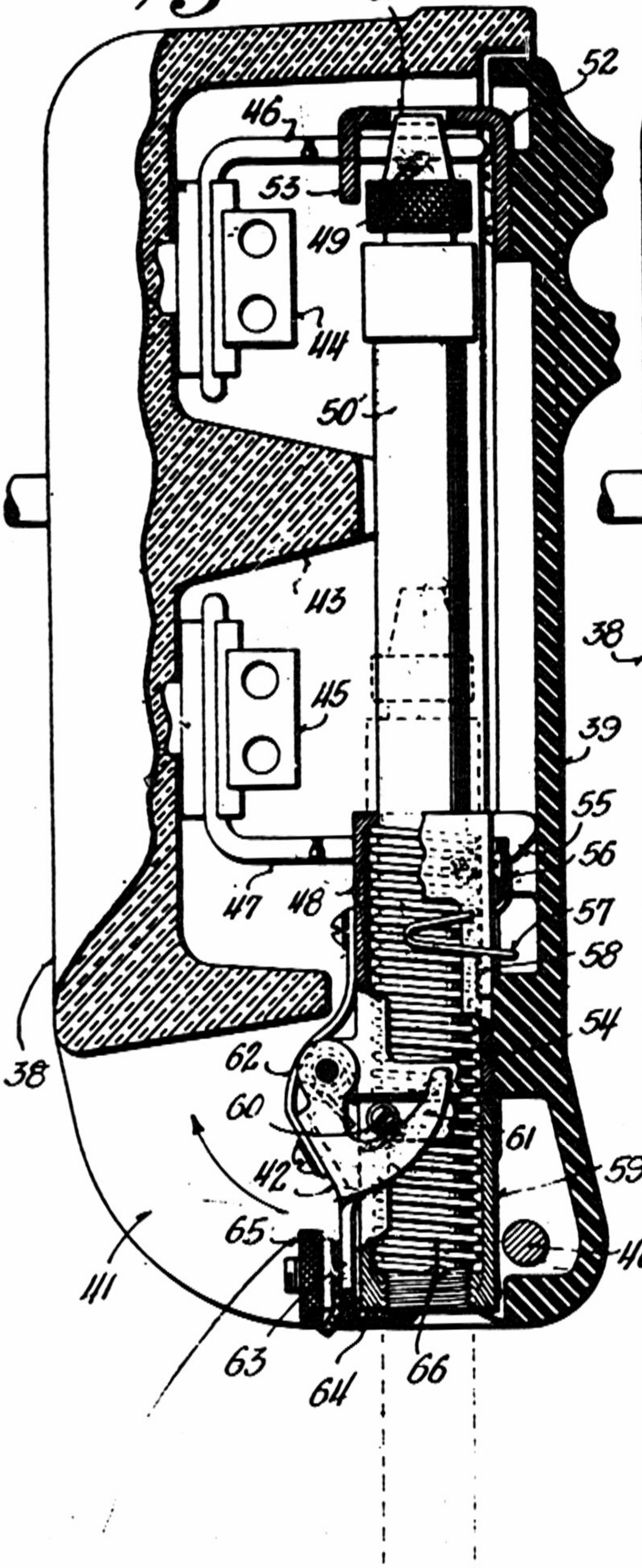
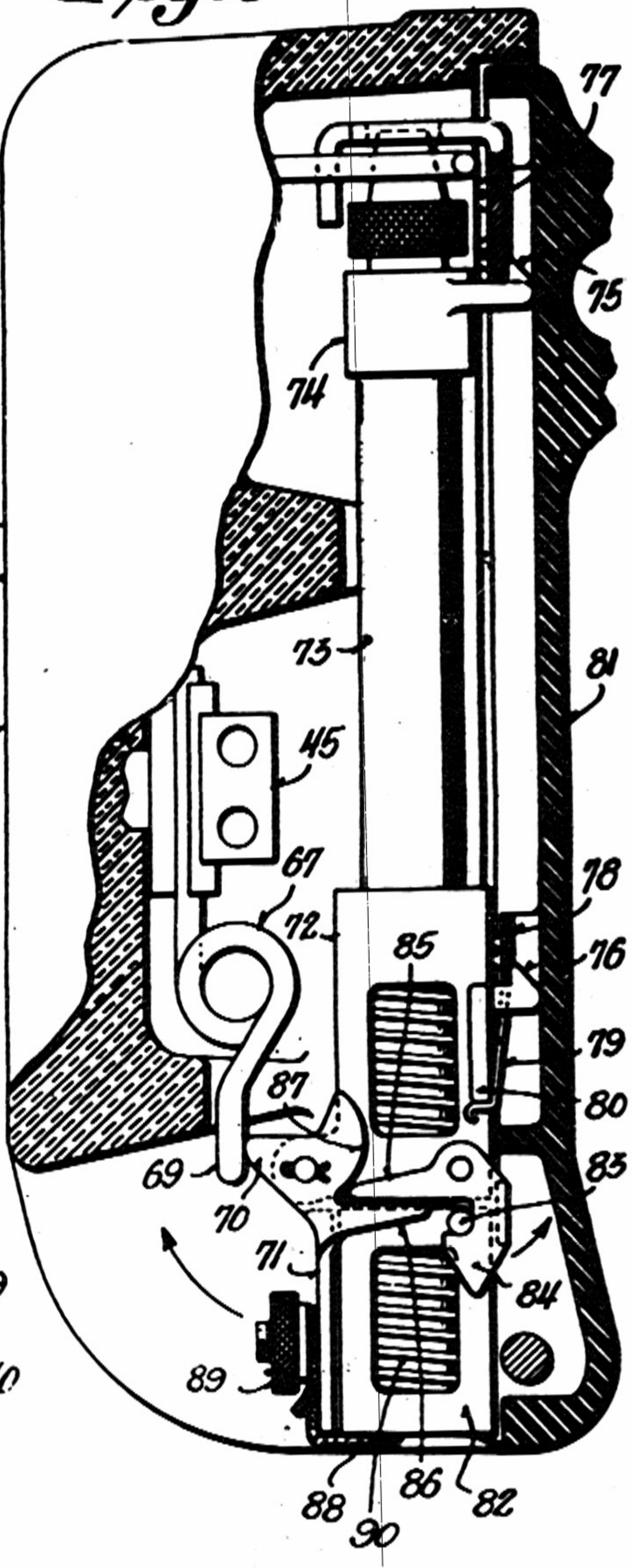


Fig. 5



INVENTOR
William O. Schultz
BY

154 the downward motion of the fuse tube is facilitated, in which latching means are provided for normally holding the fuse tube in elevated position, and in which means are provided for positively releasing the latching means when the fuse link is ruptured thus insuring the release of the fuse tube.

Embodiments of the invention are shown in the accompanying drawings, in which:——

Figure 1 is a side elevation of one form of the device with parts in vertical section, such view showing in dotted lines the final position of the fuse tube after the fuse link has been ruptured.

Figure 2 is a sectional view on the line 2—2 of Figure 1.

Figure 3 is a fragmentary detail view, such view corresponding to a section on the line 3—3 of Figure 1.

Figure 4 is a view corresponding to Figure 1 showing a modified form of the invention.

Figure 5 is a view corresponding to Figure 1 showing a still further form of the invention.

Referring to the drawings, particularly Figures 1, 2 and 3, it will be seen that the fuse comprises a housing 1 which may be of any suitable insulating material such as porcelain to which a door 2 is hingedly joined adjacent its lower end in any suitable manner, as by means of the transverse pin 3. The door may be of "Bakelite" or other suitable insulating material. It is provided with an eye or
155 handle 4 for facilitating the opening of the door.

Any suitable means may be provided for holding the door closed when the fuse tube is removed. For example, a spring clip 5 may be carried by the door and may fit within an indentation formed in the upper portion of the housing. The housing is preferably provided with a barrier 6 intermediate its ends and with upper and lower terminal members 7 and 8. The lower terminal member 8 carries a pair of outwardly projecting prongs or spring arms 9 which may have outwardly turned ends and which clamp around or yieldingly bind against the lower contact 10 of the fuse tube 11. The upper terminal member 7 may be provided with a spring arm 12 whose inturned end 13 engages the upper contact 14 of the expulsion fuse. If desired, an additional spring member 15 may be provided to bear against the inturned portion 13 and increase the spring pressure and improve the electrical contact between the rounded upper end of the upper contact 14 of the fuse tube and the member 13.

The door 2 is provided with a cut out upper portion 16 to accommodate the member 12 and with a lower cut out portion 17 within which the hooked end 18 of the lower contact 10 is received. A pair of bosses 19 are formed integral with the door 2 and project inwardly within the cut out portion 17. These bosses carry a transverse strap or plate 20 behind which the hook 18 is positioned when the fuse tube is locked in place. The bosses also carry a pair of V-shaped spring arms 21 which press downwardly against lugs 22 formed on the lower contact 10 of the fuse tube and thus hold the hook 18 locked to the plate 20.

156 Preferably the hook 18 is provided with a lower bevelled face, as indicated, so that when the fuse tube is pressed towards the door to position it, the bevelled lower face of the hook 18 rides over the plate 20 and thus raises the fuse tube, compressing the springs 21 until the hook snaps into place. The springs yieldingly hold the contact 10 downwardly and the hook 18 in interlocking relation with the plate 20. The upper end of the door is provided with a rounded cut out portion 23 within which the upper contact 14 seats to thus more securely position the fuse tube. The upper and lower contacts are joined by the fuse link 24 in the usual manner, and it is preferable to provide a small notch 25 in the lower portion of the fuse tube through which the fuse link passes.

It is to be noted particularly that the lower contact 10 is not rigidly secured to the insulating body portion 11 of the fuse tube, but in reality it constitutes a sleeve loosely and freely receiving the fuse tube so that the fuse tube may slide through this sleeve or lower contact 10. This sleeve thus forms in reality a cradle within which the fuse tube 11 is slidably mounted.

The fuse tube is provided with a collar 26 rigidly secured at a position slightly above its lower end and which is provided with outwardly projecting rollers 27. These rollers are normally engaged by the hooklike arm 28 of a latch and contact member 29. This member 29 has a pair of upper ears 30 which are pivoted to ears 31 formed integrally with the cradle contact or sleeve 10, as shown most clearly in Figure 3.

157 A pintle pin 32 passes through the ears and a spring 33 is positioned around the pin and urges the latch member 29 in a clockwise direction, as viewed in Figure 1. However, this contact member 29 is prevented from moving outwardly by means of the fuse link which is clamped to the face of the contact member 29 by means of a thumb nut 34, see Figure 1. The lower swinging or pivoted contact 29 is thus restrained from movement by the fuse link itself. The lower contact, however, is biased towards motion in a clockwise direction, as stated, by means of the spring and as indicated by the arrow in Figure 1. Preferably a flexible conducting leader 35 joins the pivoted contact member 29 and the lower contact 10.

The operation of the apparatus is as follows: When the fuse blows and the fuse link is ruptured, the lower pivoted contact member 29 is released and swings in a clockwise direction under the influence of the spring 33. This withdraws the hooklike arms 29 from the rollers 27 and thus releases the fuse tube 11. The fuse tube 11, after the reactive forces of the gases has ceased, drops downwardly into the dotted line position and projects beyond the lower portion of the housing through an opening 36 formed in the lower portion of the door, thus greatly increasing the gap in the electrical circuit, in addition to that provided by the ruptured fuse link.

It is to be noted that although an abutment or bearing surface 37 is formed on the door 2 against which the contact 10 bears, that nevertheless the free sliding action of the fuse tube is not interfered with, as the fuse tube slides through the contact 10.

158 It is to be noted particularly that the fuse acts as an expulsion fuse and secures the clearing action common to expulsion fuses. However, it has the additional advantage of pulling whatever remains of the lower portion of the severed fuse link quickly from the fuse tube due to the motion of the member 29, thus clearing the fuse with the utmost speed.

Further than this, it is to be noted that this device provides a visual indication of the condition of the fuse for when the fuse has blown, the fuse tube projects downwardy below the housing and thus visually indicates the condition of the fuse.

Referring to Figure 4 in which a further form of the invention is shown, it will be seen that the housing 38 is provided with a door 39 pivoted adjacent its lower end in any suitable manner as by the pintle pin 40. The door and the housing jointly provide an opening through which the lower end of the fuse tube projects. The housing is preferably cut away adjacent its lower portion and provided with side flanges 41 to provide space within which the rocking contact member 42 may move. This rocking contact member will be described in greater detail hereinafter.

The housing is provided with a baffle 43 and with an upper terminal member 44 and a lower terminal member 45. These members carry spring arms or contact members 46 and 47 respectively, the member 47 engaging around the lower contact or sleeve-like cradle member 48 as previously described, and the upper member engaging the upwardly tapered, conical end 49 of the nut for the upper end of the fuse tube 50.

159 This conical or tapered portion 49 thus does not interfere with the free downward sliding motion of the fuse tube, although it is gripped between the spring arms 46. The upper end of the member 49 is positioned loosely within the aperture 51 of the clip 52 carried by the upper end of the door. This clip is provided with a downwardly turned portion 53 which fits between the converging

spring arms 46 and thus serves to releasably hold the upper end of the door closed even if the fuse tube is removed.

The door is provided with an abutment 54, as previously described, against which the lower contact 48 bears. This lower contact is provided with a hook member 55 which engages over the strap or anchoring member 56 carried by the door. Springs 57 bear against the ears 58 carried by the contact 48 in the manner previously described and thus hold the fuse tube to the door.

The fuse tube is provided with a lower sleeve or member 59 which is equipped with rollers 60 engaged by the arms or hooks 61 of the rocking contact 42, such rocking contact being spring urged outwardly, as indicated, and being connected by means of a flexible conducting leader 62 to the contact 48, all as previously described.

It is to be noted, however, that the rocking contact 42 is provided with an extended lip 63, over the lower end of which the fuse link 64 passes, such link being preferably positioned within a slot formed in the lower portion of the lip 63, as indicated in Figure 4. The free end of the link is clamped by means of the thumb nut 65. The rocking contact 42 is biased so as to tend to rock in a clockwise direction, as indicated by the arrow in Figure 4.

It is to be noted that the sleeve 59 in reality constitutes a cuplike member, and that the lower contact member 48 or cradle not only acts in the manner of a sleeve to slidably hold the fuse tube, but jointly with the member 59 houses a compression spring 66 which urges the fuse tube downwardly, thus assisting the action of gravity.

The operation of this form of the invention is similar to that previously described, with the exception that additionally to the action of gravity, the fuse tube is urged downwardly by the spring 66, and thus is positively forced outwardly from the housing after the fuse blows.

In the form of the invention shown in Figure 5, the housing 38 is identically the same as that described in connection with Figure 4. However, the lower terminal member 45 carries a downwardly projecting pair of spring arms which are looped, as indicated at 67, and which terminate in lower arms 69. These lower arms are constantly yieldingly urged outwardly. They bear adjacent their lower ends against the cam like ears 70 of the rocking lower contact member 71. This contact member 71 is pivotally carried from the lower contact 72 of the fuse tube 73. The fuse tube 73 is held in a slightly different manner to the door from that previously described. The upper contact 74 and the lower contact 72 are provided with upwardly turned cam hook members 75 and 76 respectively which fit behind the lower end of the clip 77 and of the transverse bar 78 carried by the door.

161 Further, a spring 79 is also carried by the door and hooks beneath the projecting ears 80 formed on the lower contact 72. The fuse is positioned by hooking the hooks behind their respective members and moving the fuse upwardly to the position shown in Figure 5, at which time the latching springs 79 carried by the door will snap beneath the ears 80.

The door 81 may be otherwise substantially similar to the door 39 described in connection with Figure 4.

It is to be noted that the lower end of the fuse tube is provided with the lower collar or cup-shaped member 82 similar to the member 59 except that it is provided with pins 83 projecting adjacent the outer portion rather than the inner portion of such cup-shaped member. These pins are engaged by the hooklike portions 84 of a restraining latch member. This restraining latch member is provided with arms 85 on opposite sides of the contact 72 to which it is pivoted, such arms being positioned above inwardly projecting arms 86 carried by the movable contact member 71 and beneath cam like portions 87 also carried by the rocking contact member 71. This rocking contact member receives the lower end of the fuse link 88 which is clamped thereto by means of the thumb nut 89 and the spring contact arms 69 bear against the cam members 70 and tend to rock the pivoted contact member 71 in a clockwise direction, as indicated by the arrow in Figure 5.

As previously described in connection with Figure 4, a compression spring 90 is interposed between the members 72 and 82 and urges the fuse tube downwardly. This downward motion of the fuse tube is normally resisted by the interlocking of the pins 83 with the hooklike portions 84.

The operation of the apparatus is as follows:

162 When the fuse blows, the member 71 rocks in the direction indicated by the arrow under the influence of the members 69. The cam-shaped portions 87 engage the upper faces of the arms 85 and rock the latches 84 out of engagement with the pins 83, thus releasing the fuse tube and allowing the fuse tube to be projected downwardly by means of the spring 90, and also assisted by the action of gravity.

It is to be noted that the construction of the latching member is such that the force of the spring urging the fuse tube downwardly is not transmitted to the fuse link and, consequently, does not strain the fuse link. This may be true of all forms of the invention, as illustrated, but is particularly true and particularly desirable where a spring is employed to urge the fuse tube downwardly.

It will be seen that this invention provides a novel form of housed type expulsion fuse in which not only expulsion action is obtained but also in which the fuse tube moves vertically downwardly from the housing and thus increases the gap in the electric circuit.

It will be seen further that the operation of the expulsion fuse will be extremely rapid as it has not only the expulsive action heretofore utilized in expulsion fuses, but also because whatever remains of the lower end of the fuse link after the blowing of the fuse is substantially instantly snapped out of the tube by means of the spring urged movable lower contact member.

163 It is to be noted, particularly with reference to Figures 1 and 4, that the latching means has an elongated sector-shaped portion 28 and 61, respectively, that holds the fuse tube in place during the period that the arc

is being extinguished within the fuse tube and the link is being withdrawn from the fuse tube. This insures the retention of the upper contact of the fuse tube in engagement with the upper stationary contact during this interval.

Obviously the hook portions 84 of Figure 5 could be similarly elongated for the same purpose of prolonging the period after the initial rupturing of the fuse link before the fuse tube slides outwardly.

It will be seen further that the construction is simple, is easy to handle, that the fuses are easy to replace, and that the device is eminently practical.

Although this invention has been described in considerable detail, it is to be understood that such description is intended as illustrative rather than limiting, as the invention may be variously embodied and is to be interpreted as claimed.

164 *I Claim*

1. A fuse construction comprising a stationary supporting means having stationary contacts, a fuse tube slidably supported from said stationary means and having spaced contacts normally electrically connected to said stationary contacts, said fuse tube being biased towards sliding motion to separate at least one of the spaced contacts from the corresponding stationary contact, a fuse link within said fuse tube electrically joining said spaced contacts, and means controlled by said fuse link for restraining said fuse tube against sliding motion.

2. A fuse construction comprising a housing having stationary contacts, a fuse tube slidably supported and normally positioned within said housing and biased towards motion outwardly from said housing, said fuse tube having spaced contacts normally engaging said stationary contacts, a fuse link electrically joining said spaced contacts, and mechanism locking said fuse tube within said housing and controlled by said fuse link, whereby when said fuse link is

severed, said fuse tube slides to a position projecting outwardly from said housing.

3. A fuse construction comprising a housing, a door for said housing, said housing having stationary contacts, a fuse tube slidably supported from said door and biased towards outward motion from said housing, said fuse tube having spaced contacts normally engaging said stationary contacts, a fuse link electrically joining said spaced contacts, and mechanism controlled by said fuse link for holding said fuse tube against sliding motion.

4. A fuse construction comprising a housing, a door for said housing, said housing having stationary contacts, a fuse tube slidably supported from said door and biased towards outward motion from said housing, said fuse tube having spaced contacts normally engaging said stationary contacts, a fuse link electrically joining said spaced contacts, and mechanism controlled by said fuse link for holding said fuse tube against sliding motion, said mechanism tending to pull said fuse link from said fuse tube.

5. A fuse construction comprising a housing, a door for said housing, said housing having stationary contacts, a fuse tube slidably supported from said door, said fuse tube having spaced contacts normally engaging said stationary contacts, a fuse link electrically joining said spaced contacts, mechanism controlled by said fuse link for holding said fuse tube against sliding motion, and means biasing said fuse tube towards outward sliding motion from said housing.

6. A fuse construction comprising a housing, a door for said housing, said housing having stationary contacts, a fuse tube having spaced contacts normally electrically connected to said stationary contacts, said fuse tube being biased towards outward sliding motion from said housing and being slidably supported within said housing, a fuse link electrically joining said spaced contacts, and mechanism interlocking with said fuse tube and restrain-

ing said fuse tube against outward sliding motion, said mechanism being controlled by said fuse link, said door having a cut-out portion to permit the outward sliding of said fuse tube.

166 7. A fuse construction comprising a housing, a door for said housing, said housing having stationary contacts, a fuse tube having spaced contacts normally electrically connected to said stationary contacts, said fuse tube being biased towards outward sliding motion from said housing and being slidably supported by said door, a fuse link electrically joining said spaced contacts, and mechanism interlocking with said fuse tube and restraining said fuse tube against outward sliding motion, said mechanism being controlled by said fuse link.

8. A fuse construction comprising a housing, a door for said housing, said housing having stationary contacts, a fuse tube having spaced contacts normally electrically connected to said stationary contacts, said fuse tube being biased towards outward sliding motion from said housing and being slidably supported by said door, a fuse link electrically joining said spaced contacts, and mechanism interlocking with said fuse tube and restraining said fuse tube against outward sliding motion, said mechanism being controlled by said fuse link, said door having a cut-out portion to permit the outward sliding of said fuse tube.

167 9. A quick action expulsion fuse comprising stationary supporting means having stationary contacts, a fuse tube having spaced contacts normally electrically connected to said stationary contacts, means slidably supporting said fuse tube, latching means normally locking said fuse tube in operative position, spring means tending to release said latching means, and a fuse link mounted within said fuse tube and electrically connecting said spaced contacts, said fuse link being connected to a movable part of said latching means and normally restraining the releasing motion of said latching means, said latching means tending to withdraw said fuse link from said fuse tube.

10. A quick action expulsion fuse comprising stationary supporting means having stationary contacts, a fuse tube having spaced contacts normally electrically connected to said stationary contacts, means slidably supporting said fuse tube, latching means normally locking said fuse tube in operative position, spring means tending to release said latching means, a fuse link mounted within said fuse tube and electrically connecting said spaced contacts, said fuse link being connected to a movable part of said latching means and normally restraining the releasing motion of said latching means, said latching means tending to withdraw said fuse link from said fuse tube, and a spring urging said fuse tube outwardly with reference to said stationary supporting member.

168 11. In a fuse construction the combination of a stationary supporting member having stationary contacts, a fuse tube having spaced contacts normally electrically connected to said stationary contacts, a cradle slidably supporting said fuse tube, a spring loosely surrounding said fuse tube and urging said fuse tube towards sliding motion outwardly from said supporting member, a rocking lever interlocking with means carried by said fuse tube and normally restraining the outward motion of said fuse tube, and a fuse link electrically joining said spaced contacts and restraining said lever against releasing motion.

12. In a fuse construction the combination of a stationary member having stationary contacts, a fuse tube having spaced contacts normally electrically engaging said stationary contacts, means slidably supporting said fuse tube with respect to said stationary member, said fuse tube being biased towards outward sliding motion from said stationary member, a lever interlocking with means slidable with said fuse tube and normally restraining the outward sliding motion of said fuse tube, a second lever having cam means for rocking said first mentioned lever towards releasing position and being spring urged towards releasing position,

and a fuse link electrically joining said spaced contacts and restraining said second lever from rocking motion.

169 13. In a fuse construction the combination of a housing having stationary contacts, a fuse tube having spaced contacts normally electrically engaging said stationary contacts and being slidably mounted within said housing, a spring urging said fuse tube outwardly from said housing, latching means for normally restraining the outward motion of said fuse tube, a second spring urging said latching means towards releasing position, the releasing motion of said latching means being independent of said first mentioned spring, and a fuse link electrically connecting said spaced contacts and restraining said latching means against releasing motion.

14. A fuse construction comprising a housing, a door pivoted adjacent its lower portion to said housing, said housing having stationary contacts, a fuse tube slidably carried by said door and biased towards outward sliding motion with respect to said door and said housing, said fuse tube having spaced contacts normally electrically connected to said stationary contacts, latching means for normally restraining the outward motion of said fuse tube, and a fuse link electrically connecting said spaced contacts and restraining the releasing motion of said latching means, said housing having a cut-out portion to accommodate said latching means when said latching means rocks towards releasing position.

170 15. In a fuse construction a housing, a door for said housing, stationary contacts carried by said housing, a fuse tube releasably interlocked with said door and slidably mounted upon said door, said fuse tube being biased towards outward sliding motion with respect to said housing and said door, said fuse tube having spaced contacts normally electrically connected to said stationary contacts, latching means spring urged towards releasing position for normally holding said fuse tube against sliding motion, and a fuse link restraining said latching means and electrically joining said spaced contacts.

16. A fuse construction comprising a housing, a door for said housing, said housing having stationary contacts, a fuse tube slidably supported from said door and biased towards outward motion from said housing, said fuse tube having spaced contacts normally engaging said stationary contacts, a fuse link electrically joining said spaced contacts, and mechanism including a lever biased towards releasing motion for holding said fuse tube against sliding motion, said mechanism being normally restrained from motion by said fuse link and having means delaying the release of said tube after the initial rupturing of said fuse link, whereby a sufficient period is allowed for the extinguishing of the arc within the fuse tube.

171 17. A fuse construction comprising a body portion having stationary contacts, a fuse tube slidably supported and biased towards motion outwardly from said body portion, said fuse tube having spaced contacts normally engaging said stationary contacts, at least one of said spaced contacts moving away from the corresponding stationary contact when said fuse tube moves outwardly, a fuse link carried within said fuse tube and electrically joining said spaced contacts, a pivoted link having an elongated sector-shaped portion, and means carried by said fuse tube and normally engaged by said sector-shaped portion to restrain said tube against motion, said link being biased toward releasing motion and being restrained against motion by said fuse link, said elongated sector-shaped portion insuring the lapse of an interval of time after the initial rupturing of said link for the extinguishing of the arc within the fuse tube prior to the outward motion of said fuse tube.

* * * * * * * * * *

216 Mail Division U. S. Patent Office Apr. 16, 1936
Division 37, Paper No. "F" U. S. Patent Office
Apr. 17, 1936

ARW:GTK

Application of William O. Schultz
Ser. No. 727,250 Filed May 24, 1934
For Fuse Constructions

Div. 37 Room 5886-B

Milwaukee, Wisconsin, April 14, 1936.

Commissioner of Patents,
Washington, D. C.

Sir:

In response to the Office actions of March 10, 1936 and March 24, 1936, please amend the above entitled application as follows:

Claim 35, line 8, before "latch" insert "and".

Last two lines, cancel "and current responsive means for releasing said conductor" and substitute therefor "*said conductor being released on the occurrence of an overload in an electric circuit*".

Claim 36, line 7, before "latch" insert "and".

Last two lines, cancel "and current responsive means for releasing said conductor and mechanism" and substitute therefor "*said conductor being released on the occurrence of an overload in an electric circuit*".

Claim 37, last line, after "to" insert "cause".

Same line, after "release" insert "of".

Same line, cancel "said conductor and".

Claim 38, line 9, cancel "responsive to" and substitute "actuated on the occurrence of an".

Lines 10 and 11, cancel "conductor and".

217 Claim 39, line 10, cancel "responsive" and substitute "controlled".

Same line, cancel "conductor and".

Line 11, change ‘‘under’’ to ‘‘upon the occurence of an’’.

Same line, cancel ‘‘conditions’’.

Claim 40, next to the last line, change ‘‘responsive’’ to ‘‘controlled’’.

Same line, cancel ‘‘conductor and’’.

Claim 41, next to the last line, change ‘‘responsive’’ to ‘‘controlled’’.

Claim 42, line 6, change ‘‘by’’ to ‘‘for’’.

Claim 43, line 8, change ‘‘by’’ to ‘‘for’’.

Add the following claims:

45. In a fuse, an insulating outer sleeve having spaced terminals, a fuse link connected between said terminals and disposed within said sleeve, and means for producing a positive gap and for extending the gap when the fuse blows, said means comprising lever means and a coiled spring disposed externally of said outer sleeve.

46. In a fuse, an outer fuse tube having spaced terminals, there being relative movement between said tube and one of said terminals, a fuse link in the tube, and means for translating the relative movement between said tube and terminal to produce a positive gap and extend said gap when the fuse link blows, said means comprising a lever pivoted to the relatively movable terminal, said link being attached to the lever.

218 47. In combination, a sleeve member constituting a terminal, a fuse tube slidable in said sleeve member, a second terminal for said fuse tube, a bracket for said tube, and a compression spring coiled about said tube and reacting between said sleeve member and said bracket to move said tube with respect to said sleeve member.

48. In combination, a pair of contacts, a fuse for connecting said contacts, said fuse comprising a fuse tube having spaced terminals and being movable relative to one of them, means for locking the fuse to at least one of said contacts, and means for moving the fuse tube longitudinally relative to said one of said fuse terminals to release said locking means.

49. In combination, a pair of contacts, a fuse for connecting said contacts, said fuse comprising a fuse tube having spaced ferrules providing terminals, said tube being movable relative to one of said ferrules, means for locking the fuse to at least one of said contacts, and means for releasing said locking means by relative movement between the fuse tube and said one of the ferrules of said tube.

50. In combination, a housing, a hinge member hinged to said housing, a fuse having a tube slidably movable in said hinge member, and a cover for the housing attached to said tube.

219 *Claims 35 through 41* have been amended. Without question the conductor is released upon the occurrence of an overload in an electric circuit and, therefore, *claims 35 and 36* are formally correct.

Claims 37, 38, 39 and 40 very clearly are in correct form as they state that the latching means is released when an overload occurs, and in *claim 41* the mechanism which interacts between the tube and guiding means and normally restrains the tube is releasable by current controlled means. Without any question applicant has provided current controlled means and also, without any possible dispute, the latch means is released upon the occurrence of an overload. These claims, therefore, avoid any criticism that can be advanced along this line. However, it is urged that the Examiner has not been governed by and has not abided by the decision called to his attention in the amendment dated February 19, 1936 and summarized on pages 13 and 14 of the argument accompanying such amendment. It is urged that the decision of the Assistant Commissioner is controlling on the Examiner and he is asked specifically to reread pages 13 and 14 of the argument accompanying the amendment of February 19, 1936 and to abide by the ruling laid down in such decision.

Claims 42 and 43. The criticism for these claims has been removed by the amendment to the claims. It is obvious that means are provided for releasing the tube from the latch so that the tube may bodily move through the open bottom of the housing. Obviously, therefore, these claims are in correct formal condition. In view of the fact that this is the only ground for rejection, it is understood that these claims will now be held allowable to applicant.

220 *Claims 45 to 50* have been made in accordance with the suggestions in the Office letter of March 24, 1936, under the provisions of Rule 96 for the purpose of interference.

Respectfully submitted,

WILLIAM O. SCHULTZ
By ARTHUR R. WOOLFOLK
His Attorney.

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259 UNITED STATES PATENT OFFICE
SDS Division 377

Mail Division U. S. Patent Office July 23 1937

Div. 37 Amendment Room 5886-B

Applicant: William O. Schultz

Serial No. 727,250

Filed May 24, 1934

For Fuse Constructions

Chicago, Illinois, July 14, 1937

Honorable Commissioner of Patents
Washington, D. C.

Sir:

Please amend the above-entitled application as follows:

Page 9, after line 7, insert the following paragraph:

"It will be obvious from the disclosure in Fig. 4 that the coil spring 66 will, through the member 59 and roller 60, urge the rocking contact 42 to move in a clockwise direction, and that it will so move the contact 42 when the fuse link 64 is severed, because that portion of the arm 61 contacting with the roller 60 is extended in an upward eccentric direction relative to the axis of rotation of the contact 42."

Remarks

The foregoing amendment is made for the purpose of amplifying and clarifying the description of Fig. 4. The first statement of objects, lines 4 to 10, inclusive, in page 2, clearly contemplates a dropout fuse in which the tube moves downwardly after the fuse blows and thereby increases the gap just as the tube in the Fig. 4 structure increases the gap.

The invention disclosed in Fig. 4 was conceived and actually constructed before the present application was prepared and filed and it was applicant's intention to fully disclose and claim and he supposed that he had disclosed and claimed such invention.

258 In support of the foregoing, a blueprint of the original drawing from which Fig. 4 was made and a supplemental oath are herewith filed in this case, said oath containing allegations that the applicant had conceived and constructed a device embodying the subject matter shown in Fig. 4 before the application was prepared and filed, and that the draftsman who prepared the patent drawings drew Fig. 4 from the disclosure in a blueprint of the same drawing from which the blueprint submitted herewith was made.

As clearly shown, the blueprint submitted herewith illustrates a dropout fuse which is in every detail like that shown in Fig. 4.

For the foregoing reasons, claims predicated upon Fig. 4 should be allowed in this case and are not for an accidental disclosure.

WILLIAM O. SCHULTZ
By CHARLES W. HILLS
His Attorneys

J
CL
Enc.

• • • • • • • • • •

304 Div. 37, Room 5886B SDS:BMB Paper No. 43
Mailed Dec 10 1941

Department of Commerce, U. S. Patent Office
Washington

Before the Board of Appeals on Appeal

In re application of
William O. Schultz
Serial No. 727,250
Filed May 24, 1934
For: Fuse Constructions

Examiner's Statement

This is an appeal from the final rejection of claims 46, 48 and 49. (Claims 1 through 10, 12 through 20, 22 through 39, 41 through 44, 56, 57, 62 through 65, 67 and 69 having been allowed.)

46. In a fuse, an outer fuse tube having spaced terminals, there being relative movement between said tube and one of said terminals, a fuse link in the tube, and means for translating the relative movement between said tube and terminal to produce a positive gap and extend said gap when the fuse link blows, said means comprising a lever pivoted to the relatively movable terminal, said link being attached to the lever.

48. In combination, a pair of contacts, a fuse for connecting said contacts, said fuse comprising a fuse tube having spaced terminals and being movable relative to one of them, means for locking the fuse to at least one of said contacts, and means for moving the fuse tube longitudinally relative to said one of said fuse terminals to release said locking means.

49. In combination, a pair of contacts, a fuse for connecting said contacts, said fuse comprising a fuse tube having spaced ferrules providing terminals, said tube being movable relative to one of said ferrules, means for locking the fuse to at least one of said contacts, and means for releas-

ing said locking means by relative movement between the fuse tube and said one of the ferrules of said tube.

305 No references are relied upon in this final rejection.

Resume of the Invention

The invention relates to a housed type of high tension fuse in which there is provided a fuse tube with the customary terminals which are caused to make contact with stationary terminals, carried by the housing, when the door is in closed position, the fuse tube being mounted on the door. When the fusible element is ruptured, the tube is released for movement longitudinally to separate its upper terminal from the upper stationary terminal and to project the lower end of the tube through the lower open end of the housing.

Referring to the drawing, applicant shows in Figure 1 a fuse tube 11 urged by spring 15 acting against contact 13 carried by the stationary contact 7, said tube 11 being slidable through sleeve member 10 surrounding the fuse tube and carried by door 2. At the lower end rollers 27 secured to ferrule 26 of the tube 11, is held by sector shaped projection 28 of element 29 which is pivoted at 32 to a part of sleeve 10 and urged by spring 33 to rotate sector 28 to unlatched position when fusible element 24 is blown. After sector 28 passes beyond rollers 27, the fuse falls due to the action of spring 15 and gravity.

In Figure 4 the upper spring is not used. In place thereof there is a spring 66 coiled around the tube, here numbered 50, whose one end bears against the sleeve member 48 and whose other end rests against the tube sleeve 59.

306 The roller carried by the tube sleeve the sector shaped element, and the small spring, here unnumbered, to rotate the sector shaped element are the same as in Figure 1 and the operation thereof is described as similar, page 9, lines 8-13.

In Figure 5 is shown a tube 73 slidable in sleeve member 72 carried by door 81 and biased by coil spring 90 around tube 73. The roller of the other modifications is replaced by a pin 83 which is held by hook 84 forming part of a bell crank whose other end 85 extends into an opening in a member 71, one side of the opening comprising a cam face 87. The other side of the opening is an arm 86 extending below part 85 to prevent rotation of hook 84 counter clockwise when the fuse is intact. Element 71 has a projection 70 extending to the left of the unnumbered pivot where it is contacted by end 69 of a resilient stationary contact 67 at a point a little above the pivot. Thus coil spring 90 exerts no tension on the fuse link when the fuse is unblown, but spring terminal 67 does so that on blowing spring terminal 67 rotates element 71 clockwise, the cam 87 of which element rotates bell crank 84 counter clockwise to remove its hook from pin 83 releasing the fuse tube which is then urged by spring 90 to a downwardly exposed position.

Claims 46, 48 and 49 are claims taken from another application and suggested to applicant for interference. They were made by applicant and two interferences were declared having these claims as counts thereof. Claims 46 and 49 were counts 1 and 3 of interference No. 72,801 and claim 48 was count 1 of interference No. 72,802. A little later it was
discovered that a third party could make claim 49
307 and interference No. 72,801 was dissolved as to count
3 (claim 49) and interference No. 73,033 having this claim as the count thereof was declared. In the meantime, this application was involved in several other interferences, particularly Numbers 72,798-9. Rival parties moved to dissolve all of the interferences as to this party Schultz on the ground that Schultz' application did not support claim 46, 48 and 49 in interferences 72,801, 802 and 73,033 and similar claims in interferences 72,798-9.

Claim 46 calls for, among other things, "and means for translating the relative movement between said tube and terminal to produce a positive gap and extend said gap when said fuse link blows". Claim 48 calls for "and means for moving the fuse tube longitudinally relative to said one

of said fuse terminals to release said locking means'' and claim 49; ''and means for releasing said locking means by relative movement between the fuse tube and said one of the ferrules of said tube''. For these claims to find support in the Schultz application they must read on his Figure 4. The examiner held in decisions mailed June 10, 1937 that the specification did not support these claims; that as to claim 46 instead of there being means for translating the relative movement between the tube and terminal to produce a positive gap, the unnumbered spring first produced the positive gap by rotating member 42 after which relative movement between tube and terminal took place; as to claim 48, the Figure 4 modification acts first to release the locking means and then allows the fuse tube to move
308 longitudinally instead of vice versa as claimed and
that claim 49 fails to read on Figure 4 for practically the same reason. The relative means does not release the locking means but the locking means is first released due to the action of the unnumbered spring which in Figure 1 is numbered 33 after which the relative movement occurs.

Schultz appealed to the Board of Appeals on July 14, 1937. The Board's decision rendered April 14, 1938 in all of these interferences affirmed the examiner's decision that there was no support in the Schultz application 727,250 for claims 46, 48 and 49 and similar claims.

Schultz filed an amendment July 23, 1937 after his appeal to the Board, which amendment seeks to insert in this application a basis for claims 46, 48, 49 and similar claims. Since there was no basis for these claims as filed, an amendment that would form a basis for them is clearly new matter and the examiner's insistence, now that this amendment and claims 46, 48 and 49 be canceled as new matter is thought to be right and proper and to come under the practice outlined in Ex parte Furness 104 O. G. 1655; 1903 C. D. 174.

It is to be noted that applicant filed what he said was a division of this application on June 27, 1938, Serial No.

215,977. On objection by the office this was changed to a "Continuation in Part". This application No. 215,977 was before the District Court, District of Columbia on a bill under R. S. 4915. In the decision of Justice Bailey rendered therein, (Line Material Co. et al v. Coe Com. of Pats., 50 U.S.P.Q. 278) appear these words:

"I do not think that the question whether the par-
309 ent application (727,250) supports the counts in-
volved in this suit or not is relevant in this proceeding, which is based upon the later application. But apart from this, I think that the evidence offered on that question is incompetent."

The evidence referred to comprises copies of affidavits by the inventor Schultz and officers of the Line Material Co., which the party Schultz has asked the Examiner to consider. This has been done and while the Examiner is of the opinion that the inventor Schultz did intend the modification shown in Figure 4 to operate as called for by claims 46, 48 and 49, the written specification failed to incorporate therein a proper basis therefor and any attempt to insert in this application such a basis is new matter.

The Examiner is clearly of the opinion that since the Board has already affirmed the Examiner's decisions that the Schultz application, as filed, does not support claims 46, 48 and 49 and since the Court in the suit on Application No. 215,977 has said that the evidence previously mentioned is *incompetent*, any action other than urging that this final rejection and requirement that the amendment filed July 23, 1937 be canceled be affirmed would be impertinent on his part.

M. E. WEAVER
Examiner

327 U. S. Patent Office Board of Appeals Mar. 11, 1942
Mailed

Appeal No. 41,451 Paper No. 56.
Hearing: February 18, 1942 JS

In the United States Patent Office
Before the Board of Appeals

Ex parte William O. Schultz

Application for Patent filed May 24, 1934, Serial No. 727,250
Fuse Constructions.

Mr. Charles W. Hills and Mr. Arthur R. Woolfolk for appellant.

This is an appeal from the action of the Primary Examiner finally rejecting claims 46, 48 and 49.

Claim 46 is illustrative and reads as follows:

46. In a fuse, an outer fuse tube having spaced terminals, there being relative movement between said tube and one of said terminals, a fuse link in the tube, and means for translating and relative movement between said tube and terminal to produce a positive gap and extend said gap when the fuse link blows, said means comprising a lever pivoted to the relatively movable terminal, said link being attached to the lever.

The claims on appeal are concerned with an electric fuse. Appellant states that the two issues involved in this appeal are questions of accidental disclosure and new matter, but the real question on which both matters in controversy may be determined is whether or not this application as orig-
328 inally filed contained a disclosure of a latching member which has an upper cam surface.

The examiner has discussed the record as to this matter. This Board, in certain interferences to which Schultz was involved, held accidental disclosure, and since that holding testimony has been taken to attempt to prove the contrary. This matter was discussed in Line Material Co. et al. v. Coe, Commissioner of Patents, Equity Suit No. 5176, for the District Court, District of Columbia, and published in Volume 50, Page 278, of the Patent Office Quarterly. The Court held the evidence offered as to the above matter to be incompetent, that the question was one obviously determined by the application itself.

The only question which should be considered is that of new matter. The modification of the fuse device illustrated in Figure 4 incidentally shows the hook member 61 for engaging roller 60 as having an eccentric curved surface on its inner side, whereas in the Figure 1 construction the similar surface is concentric. Appellant urges that he should be entitled to modify the specification to take note of this difference and he has presented an amendment of July 28, 1937 for this purpose. This amendment has not been entered as its presents new matter. Appellant argues, in view of the showing of Figure 4, that he should be entitled to so change the specification, but on the other hand, this seems contrary to the statement on page 9, lines 8 to 13, that the operation of the form of the invention as shown in Figure 4 is similar to that shown in Figure 1 with certain exceptions as stated. The original specification made no reference to the eccentric surface on the latch 61 which would tend to force roller 60 mounted on a part of the fuse tube in a direction 329 to increase the downward movement of the fuse tube caused by gravity. While appellant has referred to certain claims and other parts of the specification as originally filed to prove that he had described such action, we are not convinced.

It is our view that in the original specification there was no reference to this curved surface on the latch member 61 in Figure 4, and certainly no indication of such curved surface causing a different action than in the Figure 1 construction, except that spring 66 causes a downward and outward movement of the fuse tube. For this reason, we believe that the amendment above referred to is new matter which the examiner has properly refused entry. Therefore the claims on appeal had no support in the application as originally filed.

We cite certain decisions which hold that a showing in the drawing without any reference in the specification is not sufficient to support claims. Permutit Co. v. Graver Corp., 284 U. S. 53; Vickery v. Barnhart, 118 F. (2d) 578, 529 O. G. 245.

The decision of the examiner is affirmed.

BOARD OF APPEALS

EUGENE LANDERS
Examiner-in-Chief

F. P. EDINBURG
Examiner-in-Chief

J. W. CLIFT
Examiner-in-Chief

March 11, 1942.

Mr. Arthur R. Woolfolk
Wisconsin National Bank Bldg.
Milwaukee, Wisconsin

* * * * * * * * * *

332 U. S. Patent Office Board of Appeals Apr. 13, 1942
Mailed

Appeal No. 41,451 Paper No. 58.
JS

In the United States Patent Office
Before the Board of Appeals
Ex parte William O. Schultz
Application for Patent filed May 24, 1934, Serial No. 727,250
Fuse Constructions.

Mr. Charles W. Hills and Mr. Arthur R. Woolfolk for appellant.

On Request for Reconsideration

Appellant requests reconsideration of our decision of March 11, 1942. It is urged, because the showing in Figure 4 of the original application is unequivocal as to the cam-shaped upper surface of the latching member, that appellant has a right to claims covering such construction.

We pointed out in our decision that the only question to be considered is that of new matter and decided accordingly. We even referred to several decisions holding that a showing in the drawing without any reference in the specification is not sufficient to support claims. This matter has not been discussed.

333 There is nothing in appellants argument that requires further discussion.

The petition is denied.

BOARD OF APPEALS
First Member Retired
Examiner-in-Chief
F. P. EDINBURG
Examiner-in-Chief
J. W CLIFT
Examiner-in-Chief

April 13, 1942.

Mr. Arthur R. Woolfolk
Wisconsin National Bank Bldg.
Milwaukee, Wisconsin

* * * * * * * * * *

BRIEF AND APPENDIX FOR APPELLEE

In the United States Court of Appeals for the District of Columbia

APPEAL NO. 8491

LINE MATERIAL COMPANY, A CORPORATION, AND WILLIAM O.
SCHULTZ, APPELLANTS,

v.

Casper W. Ooms
~~CONWAY P. COE,~~ COMMISSIONER OF PATENTS, APPELLEE

APPEAL FROM THE JUDGMENT OF THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA

W. W. COCHRAN,
Solicitor, United States Patent Office,
Attorney for Appellee.

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Appendix 17

In the United States Court of Appeals for the District of Columbia

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Appeal No. 8491

Line Material Company, a Corporation, and William O. Schultz, appellants,

v.

Conway P. Coe, Commissioner of Patents, appellee

APPEAL FROM THE JUDGMENT OF THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA

BRIEF FOR THE COMMISSIONER OF PATENTS

This is an appeal from the Judgment (16)[1] of the District Court of the United States for the District of Columbia dismissing the Complaint (1) by which appellants sought to have the Court authorize the Commissioner of Patents to issue to them a patent containing claims 46, 48, and 49 of the application No. 727,250 of appellant Schultz.

THE APPLICATION OF APPELLANT SCHULTZ

The Schultz application (98–111) relates to an electric fuse construction adapted to break an electric circuit in which the fuse is installed, upon the occurrence of an overload.

The Patent Office has allowed 49 claims of the application but has refused to allow claims numbered 46, 48, and 49 (3, 4) for the reason that these particular claims are not supported by appellants' application as is required by Section 4888 R. S. (U. S. C., title 35, sec. 33).

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[1] The numbers in parentheses throughout this brief refer to pages of appellants' appendix.

The pertinent portion of this section reads as follows:

> Before any inventor or discoverer shall receive a patent for his invention or discovery, he shall make application therefor in writing, to the Commissioner of Patents, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions; and he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery.

Three fuse constructions or devices are disclosed in the application. Appellants contend that the disclosure made of each device will support the appealed claims, but the Patent Office and the lower court have held to the contrary. These devices will now be considered separately in connection with the claims on appeal.

One device is shown in Figures 1, 2, and 3 of the drawing and the remaining devices in Figures 4 and 5. For convenience in discussing these devices, reference will be made to appellants' physical exhibits 2 and 3 which are copies of the application drawings with the parts shown in different colors. In each of the devices there are two terminals, one colored gray and the other tan, as, for example, in Fig. 1 the terminals 7 and 8. In each device the terminals are connected by a green fuse link located within a yellow fuse tube. The fuse tube 11 of Fig. 1 is connected at its upper end to the terminal 7 by means of the conducting springs 12 and 15, and at its lower end it slides within the sleeve-like contact member 10. The fuse tube is held in position and prevented from dropping to the dotted line position shown in the drawing by the brown latch member 29 having arms 28 which support rollers 27 carried on studs projecting from the yellow fuse tube. The brown latch member is pivoted at 32 so that it may be turned to withdraw the arms 28 from under the studs 27, and thus release the yellow fuse tube 11. The latch is biased toward unlatching position by the pink spring 33. The latch, however, is held in latching position against the influence of the spring 33 by the green fuse link 24 which is fastened to the latch by means of the nut 34. The operation is as follows: The current enters through terminal 7, passes through the springs 12, 15, then downwardly through the green fuse link 24, and then through the latch 29 to the blue contact member 10. The operation of the latch is described in the specification as follows (101, 102):

> The operation of the apparatus is as follows: When the fuse blows and the fuse link is ruptured, the lower pivoted contact member 29 is released and swings in a clockwise direction under the influence of the spring 33. This withdraws the hooklike arms 29 from the rollers 27 and thus releases the fuse tube 11.
>
> * * * * *
>
> It is to be noted particularly that the fuse acts as an expulsion fuse and secures the clearing action common to expulsion fuses. However, it has the additional advantage of pulling whatever remains of the lower portion of the severed fuse link quickly from the fuse tube due to the motion of the member 29, thus clearing the fuse with the utmost speed.

THE CLAIMS ON APPEAL

The appealed claims read as follows (3, 4):

> 46. In a fuse, an outer fuse tube having spaced terminals, there being relative movement between said tube and one of said terminals, a fuse link in the tube, and means for translating the relative movement between said tube and terminal to produce a positive gap and extend said gap when the fuse link blows, said means comprising a lever pivoted to the relatively movable terminal, said link being attached to the lever.

48. In combination, a pair of contacts, a fuse for connecting said contacts, said fuse comprising a fuse tube having spaced terminals and being movable relative to one of them, means for locking the fuse to at least one of said contacts, and means for moving the fuse tube longitudinally relative to said one of said fuse terminals to release said locking means.

49. In combination, a pair of contacts, a fuse for connecting said contacts, said fuse comprising a fuse tube having spaced ferrules providing terminals, said tube being movable relative to one of said ferrules, means for locking the fuse to at least one of said contacts, and means for releasing said locking means by relative movement between the fuse tube and said one of the ferrules of said tube.

The claims are also found in convenient chart form in appellants' physical exhibits 3, 4, and 5.

SUMMARY OF ARGUMENT

The disclosure made in the application of appellant Schultz as filed in the Patent Office does not support the claims on appeal.

Claim 46 requires that movement of the fuse tube shall produce a positive gap and extend the gap when the fuse link blows. In each of appellants' devices the positive gap is produced and extended by the turning movement of the latch member which draws the ends of the broken fuse link apart. This occurs before and therefore not because of movement of the fuse tube.

Claims 48 and 49 require that the latch means be released by movement of the fuse tube but this is not true of any of the Schultz devices for in them a special spring is provided for turning the latch to released position to allow *subsequent* downward movement of the fuse tube.

Any force which the fuse tube theoretically may exert on the end of the latch at the very moment the latch reaches its released position is, as the lower court found, so slight as to be inconsequential. Such an inconsequential and doubtfully existent effect cannot form a proper basis for a claim. This is particularly true in the present case because every pertinent statement in the Schultz specification as to the operation of the latch is contrary to appellants' contention that movement of the fuse tube causes the latch to release.

ARGUMENT

The Device of Figs. 1, 2, and 3

Claim 46, which is quoted above, contains the clause, "means for translating the relative movement between said tube and terminal to produce a positive gap and extend said gap when the fuse link blows, said means comprising a lever pivoted to the relatively movable terminal, said link being attached to the lever." This means that the movement of the yellow tube 11 downward through the blue contact 10 is translated by the pivoted latch 29 to produce a positive gap between the broken ends of the green fuse link 24 and extend said gap. But according to the Schultz specification (102) quoted above and according to the actual operation of the device, when the green fuse is ruptured by an overload it no longer holds the latch 29 in the position shown in Fig. 1 and the latch is moved counter-clockwise by the pink spring 33 to released position and in doing so draws apart the ends of the ruptured fuse link, thus producing a positive gap between said ends. Thus it is the pink spring 33 and not the yellow tube 11 which actuates the latch 29 to produce the positive gap.

Claim 48, quoted above, contains the clause "means for moving the fuse tube longitudinally * * * to release said locking means." Claim 49, also quoted above, contains a similar clause.

Thus it is clear that all the appealed claims state in effect that the latch 29 is moved to released position by downward movement of the yellow fuse tube 11. This is not true. It is the spring 33 which moves the latch, and the latch must be released before the fuse tube can move downwardly. This is clear from the drawing and from the description made by Schultz in his specification (101) quoted above. Notwithstanding this clear disclosure, appellants contend that when the latch in its movement reaches the position shown in Fig. 1 of the chart facing page 16 of their brief, the roller 27 carried by the tube 11 will act on the inclined end of the latch jaw 28 and force the latch to completely released position. Upon this theorizing appellants rest their whole case as to the device shown in Figs. 1, 2, and 3. No such operation was ever hinted at during the eight years that the Schultz application was pending in the Patent Office. The spring 33 being strong enough to move the latch almost instantaneously up to the point of release against all the forces of friction present in the device, is obviously equal to the task of moving the latch the last infinitesimal amount to complete the release.

Whether the mode of operation alleged by appellants at this late date would actually occur, even to a slight and inconsequential degree, would clearly depend on the slope which the end surface of the latch has when the point of the latch comes under the stud 27. It would also depend on the relative strength of the springs 33 and 12, 13, 15 and on the amount of relaxation of the spring 33 attained in its movement of the latch to this point. None of these features is even remotely referred to in appellants' specification or during the eight years of prosecution of the application, and the alleged operation is foreign to and contrary to the operation described in the application.

As late as February 18, 1942, substantially 8 years after the Schultz application was filed, he stated unequivocally in his brief before the Board of Appeals of the Patent Office (See Appendix hereto) that the downward thrust of the fuse tube does not tend to release the latch, either in the device of Figs. 1, 2 and 3 or the device of Fig. 5.

The Device of Fig. 5

The device of Fig. 5, see appellants' Exhibit 3, differs from the device of Fig. 1 mainly in two respects. First, red spring 90 is providing for moving the yellow tube 73 downward after the latch is released, and, second, the latch is of a different construction. The latch is made in two parts, the brown part 71 and the sepia part 84. In this device the path of the current is in general the same as in Fig. 1. When the fuse 88 blows, the latch is first released and then the fuse tube 73 is forced downward by the red spring 90 operating between the contact 72 and the cup member 82 carried by the lower end of the fuse tube 73. The operation of this species is described in the Schultz specification as follows (105):

> The operation of the apparatus is as follows: When the fuse blows, the member 71 rocks in the direction indicated by the arrow under the influence of the members 69. The cam-shaped portions 87 engage the upper faces of the arms 85 and rock the latches 84 out of engagement with the pins 83, thus releasing the fuse tube and allowing the fuse tube to be projected downwardly by means of the spring 90, and also assisted by the action of gravity.
>
> It is to be noted that the construction of the latching member is such that the force of the spring urging the fuse tube downwardly is not transmitted to the fuse link, and, consequently, does not strain the fuse link. This may be true of all forms of the invention, as illustrated, but is particularly true and particularly desirable where a spring is employed to urge the fuse tube downwardly.

The second paragraph of this quotation completely refutes appellants' contention that the red spring 90 operates to urge the latch to unlatching position. If the spring 90 did so operate the green link 88 would be under the strain of such an unlatching force. Yet the specification expressly states that the force of the spring 90 is not transmitted to the fuse link 88.

In the operation of this species as it is described in the specification and as it actually occurs, the pink spring 67 turns the lever 70 as soon as the latter is released by the blowing of the green fuse 88. The cam surface 87 of the member 70 then operates on the surface 85 of the latch 84 to rock it counterclockwise to release the pin 83. Thereupon, and not until then, the spring 90 begins to move the tube 70 downwardly. The pink spring 67 does the unlatching and not the red spring 90.

Appellants argue and attempted to demonstrate at the trial that after the latch 84 has started to rotate toward unlatching position under the influence of the cam 87 and spring 69, the downward pressure exerted by the stud 83 would tend to aid the spring 67 in throwing the latch to the completely released position. Such a trivial, inconsequential and practically non-existent action of the spring 90 is the basis on which appellants would have this Court find that what releases the latch is the downward movement of the tube 73 and not the action of spring 67 and cam 87.

Such a finding would be contrary to the holdings of the Patent Office and the lower court and directly contrary to the statement of Schultz in his own specification, quoted above, and in his brief before the Board of Appeals. (See Appendix hereto.) It would also be directly contrary to the following clause of claim 13 (110) which formed a part of the original specification and now stands allowed:

> * * * a spring urging said fuse tube outwardly from said housing, latching means for normally restraining the outward motion of said fuse tube, a second spring urging said latching means towards releasing position, the releasing motion of said latching means being independent of said first mentioned spring * * *.

The Device of Fig. 4

The device illustrated in Fig. 4, see Appellants' Exhibit 3, was the one relied on by appellants in the Patent Office as supporting the claims on appeal. It obviously operates in much the same manner as the other two species. In the specification (103) it is said that the operation of this form of the invention is similar to the previously described operation of the species of Fig. 1, with the exception that additionally to the action of gravity the fuse tube is urged downwardly by the spring 66, and thus is positively forced outwardly from the housing after the fuse blows.

It is true that the "arms or hooks" 61 of the member 42 as shown in the drawing have an upper surface which, unlike the upper and inner surface of the arms 28 of Fig. 1, are not formed on the arc of a circle having its center at the pivot of the member 42. As actually shown in the drawing, the upper edge of the arm 61 is of such shape that downward pressure on it by the stud 60 would tend to move the locking member 42 clockwise toward unlocking position. The spring 66 exerts such a force and appellants therefore contend that in view of this showing in the drawing the operation set forth in the last clause of the claims on appeal is inherent in the disclosure made in the application.

Such a contention is unsound for reasons which will now be set forth:

The particular shape given to the upper surface of the "arm or hook" 61 may have been drawn by the draftsman without care of design. There is nothing in the specification or claims to indicate that the shape shown had any significance. Indeed every statement in the specification and claims which has any bearing on the matter refutes the contention that the species of Fig. 4 operates differently from Fig. 1 as respects the unlatching action.

It is well established that a drawing alone is not a disclosure sufficient to support a claim. The Supreme Court in *The Permutit Co.* v. *Graver Corp.*, 284 U. S. 53, said:

> * * * while drawings may be referred to for illustration and may be used as an aid in interpreting the specification or claim, they are of no avail where there is an entire absence of description of the alleged invention or a failure to claim 1. The statute requires the patentee not only to explain the principle of his apparatus and to describe it in such terms that any person skilled in the art to which it appertains may construct and use it after the expiration of the patent, but also to inform the public during the life of the patent of the limits of the monopoly asserted * * *.

See also *Vickery* v. *Barnhart*, 28 C. C. P. A. 979, 118 F. (2d) 578.

Here appellants not only do not have a specification to support their contention as to the operation of Fig. 4, but they have a specification which contradicts their contention.

It is also well settled that the drawings of an application for patent are not working drawings. They are merely illustrative of the invention described in the specification and claims. *Western Telephone Mfg. Co.* v. *American Electric Telephone Co.*, 131 Fed. 75; *Gold* v. *Gold*, 1910 C. D. 314, 34 App. D. C. 152.

While appellants' demonstration at the trial of a model of Fig. 4 clearly showed that the fuse tube 50 moved downward during the releasing of the latch, there was no demonstration that without the aid of the unnumbered pink spring, the spring 66 would be strong enough to cause downward movement of the tube 50 against the forces of friction encountered in moving the latch to a released position.

To hold that movement of the tube 50 causes the latch to move to released position would be in conflict with the statement of appellant Schultz in his specification (105, quoted above) that the construction of the latching member 61 is such that the force of the spring 66 is not transmitted to the fuse link 64 and does not strain it, and the further statement that this is particularly true and desirable where a spring is employed to urge the fuse tube downwardly (as in Figs 4 and 5).

Such a holding would also be in direct conflict with the statement in allowed claim 13, quoted above. It is inconceivable to appellee that appellants should be allowed claims 46, 48 and 49 which are in direct conflict with said allowed claim.

COMMENTS ON APPELLANTS' BRIEF

Throughout their brief appellants take the position that the testimony of their expert witness Mr. McNulty was unequivocally to the effect that the models which he constructed and placed in evidence operated in the manner required by the appealed claims, and that countervailing evidence was not offered by appellee. But the statements made by appellant Schultz in his application are in evidence and constitute a complete refutation of the expert's testimony that the mode of operation of the Schultz disclosure satisfies the appealed claims.

Appellants contend (Br. p. 15) that the lower Court's ruling was that the evidence established that the fuse structure as originally disclosed has the capability required by the claims, but that the statements in the specification which the Court thought were inconsistent with such a theory of operation, moved the court to find for appellee. The lower court however, found that the influence of the red springs 66, 90, even if it may exist at the last instant of the release of the latch, is so slight as to be inconsequential. The court made these findings (14, 15):

> 4. The evidence shows that plaintiffs' expert witness, as one man skilled in the art and perhaps exceptionally so, did construct models wherein the springs coiled about the fuse tube, presumably did expedite to some degree the consummation of the unlatching process, but this evidence is not convincing that anyone skilled in the art would from the application taken as a whole so construct the mechanism as a matter of course. The fuse tube ejection, after severance of fuse link 24, is so instantaneous that it is impossible to assess the proportionate influence on the completed process of the forces severally exerted by spring 33, spring 15, and by gravity.
>
> * * * * *
>
> 9. The degree to which the springs 15, 66 and 90 may operate in the ultimate complete release of the latch is so slight as to be inconsequential and since the description of these springs and the operation thereof set forth in the specification of the Schultz application negatives the existence of any function thereof in effecting release of the latch, the application considered as a whole is not a disclosure of an apparatus in which the springs have this function.

In appellants' brief, on pages 20 and 21, certain parts of the Schultz specification are quoted as supposedly supporting appellants' contention that the red springs 12, 18, 66 and 90 act on the fuse tube to release the latch. But it is evident that the "means * * * for positively releasing the latch" is the pink spring 33 in Figs. 1, 2, and 3 and the similar pink springs in Figs. 4 and 5. When the latch is thus positively released, the fuse tube is released just as the specification states. This is quite different from saying that the movement of the fuse tube releases the latch. Of course "the fuse tube is urged downwardly by the (red) spring 66" in Fig. 4 and the similar spring

90 in Fig. 5 and these red springs acting through the studs 60 and 83 exert a force on the latch, but the force is not applied in a manner to release the latch. The latch holds the studs in opposition to the force of the springs. The action is similar to that which occurs when one tries to force open a bolted door. The force is transmitted to the bolt but not in a manner to move the bolt to a released position.

In endeavoring to explain away the positive statement of allowed claim 13, which is contrary to appellants' contentions, appellants say in their brief (p. 23):

> The lower court emphasized the fact that original claim 13 included the statement "the releasing motion of said latching means being independent of said first mentioned spring" (spring 90 in Figure 5—Appellants' App. 110). This is a true statement, since the spring on the lever does not depend for its action on the spring acting on the tube, but it does not follow therefrom that the spring acting on the lever prevents the larger spring acting on the tube from functioning in the release of the parts. At most, all this statement means is that the spring associated with the latching member provides an independent force for withdrawing the latching means, but it does not follow therefrom that the spring moving the tube cannot also act contemporaneously in the final release of the latch.

In effect appellants say that the releasing motion of the latch is independent of the red spring but is also caused in part by the red spring. This sort of reasoning permeates appellants' brief.

Appellants urge (Br. p. 37) that there is no question but that Schultz disclosed the elements of the claims, and that the sole question is whether the functional characteristic recited in each of the claims is inherent in the structure which is fully described in the Schultz specification. This is hardly accurate for appellee denies that the Schultz application disclosed any such means as that defined in the last clause of claims 48 and 49 or the "means for translating" recited in claim 46.

Appellants make the statement (Br. p. 31) that appellee has not "denied the fact that the spring for moving the fuse tube downwardly in the apparatus claimed will function in the manner claimed." Counsel for appellee has endeavored throughout the proceedings to make it clear that neither the contradicting Schultz specification nor the inherent operation of the devices of his drawings will support the appealed claims. It is believed that appellee's position was made clear to the lower court, if not to appellants, for in finding No. 9 (15) the court said: "The degree to which the springs 15, 66, and 90 *may* operate in the *ultimate* complete release of the latch is so slight as to be *inconsequential* * * *." [Emphasis added.]

The decision in *Ex parte Rucker,* 25 U. S. P. Q. 296, cited by appellants (Br. p. 36) is not in point for no contention has been made that the Schultz devices are inoperative. They are obviously operative in just the manner described and claimed by Schultz in his original specification and claims.

The decision in *Hansgirg* v. *Kemmer,* 102 F. (2d) 212, 26 C. C. P. A. 937, cited by appellants (Br. p. 35) is in point. The Court in that case said:

> * * * Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient.

If probabilities and possibilities are insufficient, it is submitted that mere theorizing as to an "inconsequential" effect, directly contradictory to all relevant statements in an applicant's specification and claims, is even less sufficient to support a claim.

CONCLUSION

It is submitted that the conclusion reached by the lower court, that the Schultz application does not support the appealed claims, is correct, and its judgment should be affirmed.

W. W. Cochran,
Solicitor, U. S. Patent Office,
Attorney for Appellee.

August 1943.

APPENDIX

APPENDIX TO APPELLEE'S BRIEF

Excerpt from the Brief of Appellant Schultz on appeal to the Board of Appeals of the Patent Office:

> The devices disclosed in this application are housed
> fuses. A porcelain housing is provided with a door
> which carries a sleeve through which the fuse tube is
> adapted to slide downwardly upon rupture of the fuse
> link on overload. In two forms of the inven-
> 312 tion, Figures 1 and 5, locking means are provided
> which positively lock the fuse tube in its opera-
> tive position and which locking means have no reaction
> tending to unlatch them due to the downward thrust of
> the fuse tube.
>
> The remaining form of the invention shown in Figure 4 is the only one involved in this appeal.

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IN THE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA

No. 8491

UNITED
COURT OF APPEALS F
DISTRICT OF COLU

FILED JAN 14 1944

Joseph W. Stewart

CLERK

LINE MATERIAL COMPANY, a corporation, and
WILLIAM O. SCHULTZ,

Appellants,

vs.

Casper W. Ooms

~~CONWAY P. COE~~, COMMISSIONER OF PATENTS,

Appellee.

APPEAL FROM THE JUDGMENT OF THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA.

REPLY BRIEF OF APPELLANTS

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THE TWENTIETH CENTURY PRESS, INC., CHICAGO

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REPLY BRIEF OF APPELLANTS

The Brief of the Commissioner of Patents properly does not question Appellants' statement of the issue here, namely, whether the language of the three claims on appeal finds support in the fuse structure disclosed in the Schultz application. As counsel for the Commissioner admitted in the Record below, page 30 of the Appendix, the question of patentability is not here in issue since the three claims are to be found in a patent granted to another. In this respect he said:

> "Mr. Cochran: If it please Your Honor, Mr. Meroni correctly states that the only issue here is whether the Schultz application as filed in the Patent Office will

> support these three claims. These three claims, I may say, Your Honor, are now to be found in a patent granted to another party.
>
> "The Court: On an application that was filed before this one?
>
> "Mr. Meroni: No, it was not filed before this one, Your Honor. We were senior party in that interference, but it was held that we couldn't make these three claims.
>
> "Mr. Cochran: So that the question of the patentability of these claims over prior patents is not here in issue."

Thus the deprival of a patent to Schultz, the senior applicant, results in the public having foisted on it a patent of another who is not the first inventor within the meaning of the statutes. If the Schultz application had issued so that it was available as a reference, the claims here would not have properly been held patentable to the other applicant over the disclosure of Schultz.

The Commissioner's justification of this refusal of a patent to Schultz, as stated concisely in the Summary of Argument appearing in the Commissioner's Brief, comprises nothing more than a mere play on words, no effort being made on the part of the Commissioner to distinguish the invention of the applicant Schultz from that of the junior patentee who has been awarded a patent with the three claims in issue.

It is the thing or structure in issue that should be considered in determining whether appellant made the invention instead of mere possible differences in the terminology of the specification of the Schultz application and claims 46, 48 and 49 on appeal.

The question is, does the (red) spring 15, 66 and 90 in any of the applicant's illustrated three species (Figures 1, 4 and 5) exert a downward force on the (yellow) fuse tube to assist in releasing the latch means and in the extension of the gap in the fuse element inside the tube.

The lower Court ruled that Mr. McNulty, an expert skilled in the art, had produced unquestioned reproductions of Figures 1, 4 and 5 and had testified that the red springs in question must function in the manner above-noted (See finding of fact 10, Appendix, page 16). The lower Court also found that each of the red springs does inherently function in the ejection of the fuse tube (See finding of fact 3, Appendix, page 14).

However, the lower Court made the same mistake as the Patent Office of putting aside the actual structure and of basing its ultimate decision solely on language employed by the attorney describing that thing. If something is not in a structure, language will not supply the deficiency and by the same token, if a feature is inherent in a structure, as is here the case, mere language will not eliminate that feature.

On the one hand, we thus have an exceptionally well qualified expert's testimony that the subject of the claims is inherent in unquestioned reproductions of Schultz's disclosures and, on the other, we have unsupported argument that such is not the case. No evidence was adduced by the Commissioner to refute the evidence offered below by the appellants.

Expert testimony in a situation of this kind has been held to be controlling. There surely would be no advantage in presenting unequivocal testimony of this character if the same can be offset by mere argument that such testimony should be disregarded because certain language in the specification is not considered consistent therewith.

As indicative of the lengths to which the Commissioner has gone to build up his argument, based on mere language rather than on refuting evidence, we note that in his brief for the first time he places reliance on a statement appearing in a Patent Office Board of Appeals brief of counsel for Schultz (see Appendix of Commissioner's Brief). That Brief, before the Board of Appeals, was not evidence below, nor could it properly have been introduced since it involves argument of counsel. At the time of the brief, counsel for Schultz was arguing his case on the basis of Figure 4 rather than on all the figures. This suit, however, involves a trial *de novo* and, accordingly, the applicant is now in a position to present his case more accurately in the light of an expert's testimony rather than on the basis of an attorney's argument.

To hold here with the Commissioner would be tantamount to ruling that the Commissioner's interpretation is controlling irrespective of the uncontroverted testimony of an unquestioned expert to the contrary. The testimony of the expert, Mr. McNulty, certainly should be given great credence, particularly in view of the laudatory remarks of the Court below in its opinion and findings. His testimony and physical exhibits certainly evidence the right of Schultz to a patent with the three claims here on appeal.

A reversal is urged.

Respectfully,

Charles F. Meroni,

Attorney for Appellants.

William A. Smith, Jr.,

Of Counsel.